Grade 5 | Mathematics Standards of Learning for Virginia Public Schools Correlation to *Eureka Math*®

About *Eureka Math*

Created by Great Minds®, a mission-driven Public Benefit Corporation, *Eureka Math*® helps teachers deliver unparalleled math instruction that provides students with a deep understanding and fluency in math. Crafted by teachers and math scholars, the curriculum carefully sequences the mathematical progressions to maximize coherence from Prekindergarten through Precalculus—a principle tested and proven to be essential in students' mastery of math.

Teachers and students using *Eureka Math* find the trademark "Aha!" moments in *Eureka Math* to be a source of joy and inspiration, lesson after lesson, year after year.

Aligned

Great Minds offers detailed analyses that demonstrate how each grade of *Eureka Math* aligns with specific state standards. Access these free alignment studies at greatminds.org/state-studies.

Data

Schools and districts nationwide are experiencing student growth and impressive test scores after using *Eureka Math*. See their stories and data at greatminds.org/data.

Full Suite of Resources

Great Minds offers the *Eureka Math* curriculum as PDF downloads for free, noncommercial use. Access the free PDFs at greatminds.org/math/curriculum.

The teacher–writers who created the curriculum have also developed essential resources, available only from Great Minds, including the following:

- Printed material in English and Spanish
- Digital resources
- Professional development
- Classroom tools and manipulatives
- Teacher support materials
- Parent resources

Mathematical Process Goals for Students	Aligned Components of *Eureka Math*
Mathematical Problem Solving	Lessons in every module engage students in mathematical processes.
Mathematical Communication	
Mathematical Reasoning	
Mathematical Connections	
Mathematical Representations	

Number and Number Sense

5.NS.1 The student will use reasoning and justification to identify and represent equivalency between fractions (with denominators that are thirds, eighths, and factors of 100) and decimals; and compare and order sets of fractions (proper, improper, and/or mixed numbers having denominators of 12 or less) and decimals (through thousandths).

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.NS.1.a Use concrete and pictorial models to represent fractions with denominators that are thirds, eighths, and factors of 100 in their equivalent decimal form.	G4 M6 Topic A: Exploration of Tenths G4 M6 Lesson 4: Use meters to model the decomposition of one whole into hundredths. Represent and count hundredths. G4 M6 Lesson 5: Model the equivalence of tenths and hundredths using the area model and place value disks. G4 M6 Lesson 6: Use the area model and number line to represent mixed numbers with units of ones, tenths, and hundredths in fraction and decimal forms. G4 M6 Lesson 7: Model mixed numbers with units of hundreds, tens, ones, tenths, and hundredths in expanded form and on the place value chart. G4 M6 Lesson 12: Apply understanding of fraction equivalence to add tenths and hundredths. G4 M6 Lesson 13: Add decimal numbers by converting to fraction form. G4 M6 Lesson 15: Express money amounts given in various forms as decimal numbers. G4 M7 Lesson 17: Practice and solidify Grade 4 fluency. G5 M1 Lesson 5: Name decimal fractions in expanded, unit, and word forms by applying place value reasoning. *Supplemental material is necessary to fully address this standard.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.NS.1.b Use concrete and pictorial models to represent decimals in their equivalent fraction form (thirds, eighths, and factors of 100).	G4 M6 Topic A: Exploration of Tenths G4 M6 Lesson 4: Use meters to model the decomposition of one whole into hundredths. Represent and count hundredths. G4 M6 Lesson 5: Model the equivalence of tenths and hundredths using the area model and place value disks. G4 M6 Lesson 6: Use the area model and number line to represent mixed numbers with units of ones, tenths, and hundredths in fraction and decimal forms. G4 M6 Lesson 7: Model mixed numbers with units of hundreds, tens, ones, tenths, and hundredths in expanded form and on the place value chart. G4 M6 Lesson 12: Apply understanding of fraction equivalence to add tenths and hundredths. G4 M6 Lesson 13: Add decimal numbers by converting to fraction form. G4 M6 Lesson 15: Express money amounts given in various forms as decimal numbers. G4 M7 Lesson 17: Practice and solidify Grade 4 fluency. G5 M1 Lesson 5: Name decimal fractions in expanded, unit, and word forms by applying place value reasoning. *Supplemental material is necessary to fully address this standard.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.NS.1.c Identify equivalent relationships between decimals and fractions with denominators that are thirds, eighths, and factors of 100 in their equivalent decimal form, with and without models.	G4 M6 Topic A: Exploration of Tenths G4 M6 Lesson 4: Use meters to model the decomposition of one whole into hundredths. Represent and count hundredths. G4 M6 Lesson 5: Model the equivalence of tenths and hundredths using the area model and place value disks. G4 M6 Lesson 6: Use the area model and number line to represent mixed numbers with units of ones, tenths, and hundredths in fraction and decimal forms. G4 M6 Lesson 7: Model mixed numbers with units of hundreds, tens, ones, tenths, and hundredths in expanded form and on the place value chart. G4 M6 Lesson 12: Apply understanding of fraction equivalence to add tenths and hundredths. G4 M6 Lesson 13: Add decimal numbers by converting to fraction form. G4 M6 Lesson 15: Express money amounts given in various forms as decimal numbers. G4 M7 Lesson 17: Practice and solidify Grade 4 fluency. G5 M1 Lesson 5: Name decimal fractions in expanded, unit, and word forms by applying place value reasoning. *Supplemental material is necessary to fully address this standard.*
5.NS.1.d Compare (using symbols $<$, $>$, $=$) and order (least to greatest and greatest to least) a set of no more than four decimals and fractions (proper, improper) and/or mixed numbers using multiple strategies (e.g., benchmarks, place value, number lines). Justify solutions orally, in writing, or with a model.	G4 M6 Topic C: Decimal Comparison G5 M1 Lesson 6: Compare decimal fractions to the thousandths using like units, and express comparisons with $>$, $<$, $=$.

Number and Number Sense

5.NS.2 The student will demonstrate an understanding of prime and composite numbers, and determine the prime factorization of a whole number up to 100.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.NS.2.a Given a whole number up to 100, create a concrete or pictorial representation to demonstrate whether the number is prime or composite, and justify reasoning.	G4 M3 Topic F: Reasoning with Divisibility G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.
5.NS.2.b Classify, compare, and contrast whole numbers up to 100 using the characteristics prime and composite.	G4 M3 Topic F: Reasoning with Divisibility G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.
5.NS.2.c Determine the prime factorization for a whole number up to 100.	G6 M2 Lesson 17: Divisibility Tests for 3 and 9 G6 M2 Lesson 18: Least Common Multiple and Greatest Common Factor G6 M2 Lesson 19: The Euclidean Algorithm as an Application of the Long Division Algorithm

Computation and Estimation

5.CE.1 The student will estimate, represent, solve, and justify solutions to single-step and multistep contextual problems using addition, subtraction, multiplication, and division with whole numbers.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.CE.1.a Estimate the sum, difference, product, and quotient of whole numbers in contextual problems.	G4 M1 Topic D: Multi-Digit Whole Number Addition G4 M1 Topic E: Multi-Digit Whole Number Subtraction G4 M1 Topic F: Addition and Subtraction Word Problems G4 M3 Topic D: Multiplication Word Problems G4 M3 Lesson 29: Represent numerically four-digit dividend division with divisors of 2, 3, 4, and 5, decomposing a remainder up to three times. G4 M3 Lesson 31: Interpret division word problems as either number of groups unknown or group size unknown. G4 M7 Lesson 6: Solve problems involving mixed units of capacity. G4 M7 Lesson 8: Solve problems involving mixed units of weight. G4 M7 Lesson 9: Solve problems involving mixed units of time. G4 M7 Lesson 10: Solve multi-step measurement word problems. G4 M7 Lesson 11: Solve multi-step measurement word problems. G4 M7 Lesson 14: Solve multi-step word problems involving converting mixed number measurements to a single unit. G4 M7 Lesson 15: Create and determine the area of composite figures. G5 M2 Lesson 2: Estimate multi-digit products by rounding factors to a basic fact and using place value patterns. G5 M2 Lesson 8: Fluently multiply multi-digit whole numbers using the standard algorithm and using estimation to check for reasonableness of the product. G5 M2 Lesson 17: Use basic facts to approximate quotients with two-digit divisors. G5 M2 Lesson 18: Use basic facts to approximate quotients with two-digit divisors.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.CE.1.a *continued*	G5 M2 Topic F: Partial Quotients and Multi-Digit Whole Number Division G5 M2 Topic H: Measurement Word Problems with Multi-Digit Division
5.CE.1.b Represent, solve, and justify solutions to single-step and multistep contextual problems by applying strategies (e.g., estimation, properties of addition and multiplication) and algorithms, including the standard algorithm, involving addition, subtraction, multiplication, and division of whole numbers, with and without remainders, in which:	*This standard is fully addressed by the lessons aligned to its subsections.*
5.CE.1.b.i sums, differences, and products do not exceed five digits;	G4 M1 Lesson 11: Use place value understanding to fluently add multi-digit whole numbers using the standard addition algorithm, and apply the algorithm to solve word problems using tape diagrams. G4 M1 Lesson 13: Use place value understanding to decompose to smaller units once using the standard subtraction algorithm, and apply the algorithm to solve word problems using tape diagrams. G4 M1 Lesson 14: Use place value understanding to decompose to smaller units up to three times using the standard subtraction algorithm, and apply the algorithm to solve word problems using tape diagrams. G4 M1 Lesson 15: Use place value understanding to fluently decompose to smaller units multiple times in any place using the standard subtraction algorithm, and apply the algorithm to solve word problems using tape diagrams. G5 M2 Lesson 4: Convert numerical expressions into unit form as a mental strategy for multi-digit multiplication. G5 M2 Lesson 5: Connect visual models and the distributive property to partial products of the standard algorithm without renaming.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.CE.1.b.i *continued*	G5 M2 Lesson 6: Connect area models and the distributive property to partial products of the standard algorithm with renaming. G5 M2 Lesson 7: Connect area models and the distributive property to partial products of the standard algorithm with renaming. G5 M2 Lesson 8: Fluently multiply multi-digit whole numbers using the standard algorithm and using estimation to check for reasonableness of the product. G5 M2 Lesson 9: Fluently multiply multi-digit whole numbers using the standard algorithm to solve multi-step word problems. G5 M2 Lesson 15: Solve two-step word problems involving measurement conversions.
5.CE.1.b.ii factors do not exceed two digits by three digits;	G5 M2 Lesson 4: Convert numerical expressions into unit form as a mental strategy for multi-digit multiplication. G5 M2 Lesson 5: Connect visual models and the distributive property to partial products of the standard algorithm without renaming. G5 M2 Lesson 6: Connect area models and the distributive property to partial products of the standard algorithm with renaming. G5 M2 Lesson 7: Connect area models and the distributive property to partial products of the standard algorithm with renaming. G5 M2 Lesson 8: Fluently multiply multi-digit whole numbers using the standard algorithm and using estimation to check for reasonableness of the product. G5 M2 Lesson 9: Fluently multiply multi-digit whole numbers using the standard algorithm to solve multi-step word problems. G5 M2 Lesson 15: Solve two-step word problems involving measurement conversions.
5.CE.1.b.iii divisors do not exceed two digits; or	G5 M2 Topic E: Mental Strategies for Multi-Digit Whole Number Division G5 M2 Topic F: Partial Quotients and Multi-Digit Whole Number Division G5 M2 Topic H: Measurement Word Problems with Multi-Digit Division

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.CE.1.b.iv dividends do not exceed four digits.	G5 M2 Topic E: Mental Strategies for Multi-Digit Whole Number Division G5 M2 Topic F: Partial Quotients and Multi-Digit Whole Number Division G5 M2 Topic H: Measurement Word Problems with Multi-Digit Division
5.CE.1.c Interpret the quotient and remainder when solving a contextual problem.	G4 M3 Lesson 29: Represent numerically four-digit dividend division with divisors of 2, 3, 4, and 5, decomposing a remainder up to three times. G4 M3 Lesson 31: Interpret division word problems as either number of groups unknown or group size unknown. G4 M7 Lesson 6: Solve problems involving mixed units of capacity. G4 M7 Lesson 8: Solve problems involving mixed units of weight. G4 M7 Lesson 9: Solve problems involving mixed units of time. G4 M7 Lesson 10: Solve multi-step measurement word problems. G4 M7 Lesson 11: Solve multi-step measurement word problems. G4 M7 Lesson 14: Solve multi-step word problems involving converting mixed number measurements to a single unit. G4 M7 Lesson 15: Create and determine the area of composite figures. G5 M2 Lesson 16: Use divide by 10 patterns for multi-digit whole number division. G5 M2 Lesson 20: Divide two- and three-digit dividends by two-digit divisors with single-digit quotients, and make connections to a written method. G5 M2 Lesson 21: Divide two- and three-digit dividends by two-digit divisors with single-digit quotients, and make connections to a written method. G5 M2 Lesson 22: Divide three- and four-digit dividends by two-digit divisors resulting in two- and three-digit quotients, reasoning about the decomposition of successive remainders in each place value. G5 M2 Lesson 23: Divide three- and four-digit dividends by two-digit divisors resulting in two- and three-digit quotients, reasoning about the decomposition of successive remainders in each place value.

Computation and Estimation

5.CE.2 The student will estimate, represent, solve, and justify solutions to single-step and multistep problems, including those in context, using addition and subtraction of fractions with like and unlike denominators (with and without models), and solve single-step contextual problems involving multiplication of a whole number and a proper fraction, with models.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.CE.2.a Determine the least common multiple of two numbers to find the least common denominator for two fractions.	G4 M3 Lesson 24: Determine if a whole number is a multiple of another number. G5 M3 Lesson 9: Add fractions making like units numerically. G6 M2 Lesson 17: Divisibility Tests for 3 and 9 G6 M2 Lesson 18: Least Common Multiple and Greatest Common Factor G6 M2 Lesson 19: The Euclidean Algorithm as an Application of the Long Division Algorithm *Supplemental material is necessary to fully address this standard.*
5.CE.2.b Estimate and determine the sum or difference of two fractions (proper or improper) and/or mixed numbers, having like and unlike denominators limited to 2, 3, 4, 5, 6, 8, 10, and 12 (e.g., $\frac{5}{8}+\frac{1}{4}$, $\frac{4}{5}-\frac{2}{3}$, $3\frac{3}{4}+2\frac{5}{12}$), and simplify the resulting fraction.	G4 M5 Lesson 20: Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12. G4 M5 Lesson 21: Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12. G5 M3 Topic B: Making Like Units Pictorially G5 M3 Topic C: Making Like Units Numerically G5 M3 Topic D: Further Applications G5 M6 Lesson 26: Solidify writing and interpreting numerical expressions. G5 M6 Lesson 27: Solidify writing and interpreting numerical expressions.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.CE.2.c Estimate and solve single-step and multistep contextual problems involving addition and subtraction with fractions (proper or improper) and/or mixed numbers having like and unlike denominators, with and without models. Denominators should be limited to 2, 3, 4, 5, 6, 8, 10, and 12. Answers should be expressed in simplest form.	G4 M5 Lesson 29: Estimate sums and differences using benchmark numbers. G5 M3 Topic B: Making Like Units Pictorially G5 M3 Topic C: Making Like Units Numerically G5 M3 Lesson 13: Use fraction benchmark numbers to assess reasonableness of addition and subtraction equations. G5 M3 Lesson 15: Solve multi-step word problems; assess reasonableness of solutions using benchmark numbers. G5 M3 Lesson 16: Explore part-to-whole relationships. G5 M6 Topic E: Multi-Step Word Problems
5.CE.2.d Solve single-step contextual problems involving multiplication of a whole number, limited to 12 or less, and a proper fraction (e.g., $9 \times \frac{2}{8}$, $8 \times \frac{3}{4}$), with models. The denominator will be a factor of the whole number and answers should be expressed in simplest form.	G4 M5 Topic G: Repeated Addition of Fractions as Multiplication G5 M4 Lesson 7: Multiply any whole number by a fraction using tape diagrams.

Computation and Estimation

5.CE.3 The student will estimate, represent, solve, and justify solutions to single-step and multistep problems, including those in context, using addition, subtraction, multiplication, and division with decimal numbers.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.CE.3.a Apply estimation strategies (e.g., rounding to the nearest whole number, tenth or hundredth; compatible numbers, place value) to determine a reasonable solution for single-step and multistep contextual problems involving addition, subtraction, and multiplication of decimals, and single-step contextual problems involving division of decimals.	G5 M1 Topic C: Place Value and Rounding Decimal Fractions G5 M1 Topic D: Adding and Subtracting Decimals G5 M1 Topic E: Multiplying Decimals G5 M1 Topic F: Dividing Decimals G5 M2 Topic C: Decimal Multi-Digit Multiplication G5 M2 Topic D: Measurement Word Problems with Whole Number and Decimal Multiplication G5 M2 Topic G: Partial Quotients and Multi-Digit Decimal Division G5 M2 Topic H: Measurement Word Problems with Multi-Digit Division G5 M4 Lesson 17: Relate decimal and fraction multiplication. G5 M4 Lesson 18: Relate decimal and fraction multiplication. G5 M4 Lesson 29: Connect division by a unit fraction to division by 1 tenth and 1 hundredth. G5 M4 Lesson 30: Divide decimal dividends by non-unit decimal divisors. G5 M4 Lesson 31: Divide decimal dividends by non-unit decimal divisors. G5 M6 Lesson 26: Solidify writing and interpreting numerical expressions. G5 M6 Lesson 28: Solidify fluency with Grade 5 skills.
5.CE.3.b Estimate and determine the product of two numbers using strategies and algorithms, including the standard algorithm, when given:	*This standard is fully addressed by the lessons aligned to its subsections.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.CE.3.b.i a two-digit factor and a one-digit factor (e.g., 2.3×4; 0.08×0.9; $.16 \times 5$);	G5 M1 Lesson 1: Reason concretely and pictorially using place value understanding to relate adjacent base ten units from millions to thousandths. G5 M1 Topic E: Multiplying Decimals G5 M2 Topic C: Decimal Multi-Digit Multiplication G5 M2 Topic D: Measurement Word Problems with Whole Number and Decimal Multiplication G5 M4 Lesson 17: Relate decimal and fraction multiplication. G5 M4 Lesson 18: Relate decimal and fraction multiplication. G5 M6 Lesson 26: Solidify writing and interpreting numerical expressions. G5 M6 Lesson 28: Solidify fluency with Grade 5 skills.
5.CE.3.b.ii a three-digit factor and a one-digit factor (e.g., 0.156×4, 3.28×7, 8.09×0.2); and	G5 M1 Lesson 1: Reason concretely and pictorially using place value understanding to relate adjacent base ten units from millions to thousandths. G5 M1 Topic E: Multiplying Decimals G5 M2 Topic C: Decimal Multi-Digit Multiplication G5 M2 Topic D: Measurement Word Problems with Whole Number and Decimal Multiplication G5 M4 Lesson 17: Relate decimal and fraction multiplication. G5 M4 Lesson 18: Relate decimal and fraction multiplication. G5 M6 Lesson 26: Solidify writing and interpreting numerical expressions. G5 M6 Lesson 28: Solidify fluency with Grade 5 skills

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.CE.3.b.iii a two-digit factor and a two-digit factor (e.g., 0.85×3.7, 14×1.6, 9.2×3.5).	G5 M1 Topic E: Multiplying Decimals G5 M2 Topic C: Decimal Multi-Digit Multiplication G5 M2 Topic D: Measurement Word Problems with Whole Number and Decimal Multiplication G5 M4 Lesson 17: Relate decimal and fraction multiplication. G5 M4 Lesson 18: Relate decimal and fraction multiplication. G5 M6 Lesson 26: Solidify writing and interpreting numerical expressions. G5 M6 Lesson 28: Solidify fluency with Grade 5 skills.
5.CE.3.c Estimate and determine the quotient of two numbers using strategies and algorithms, including the standard algorithm, in which:	*This standard is fully addressed by the lessons aligned to its subsections.*
5.CE.3.c.i quotients do not exceed four digits with or without a decimal point;	G5 M1 Lesson 1: Reason concretely and pictorially using place value understanding to relate adjacent base ten units from millions to thousandths. G5 M1 Topic F: Dividing Decimals G5 M2 Topic E: Mental Strategies for Multi-Digit Whole Number Division G5 M2 Topic F: Partial Quotients and Multi-Digit Whole Number Division G5 M2 Topic G: Partial Quotients and Multi-Digit Decimal Division G5 M2 Topic H: Measurement Word Problems with Multi-Digit Division G5 M4 Lesson 29: Connect division by a unit fraction to division by 1 tenth and 1 hundredth. G5 M4 Lesson 30: Divide decimal dividends by non-unit decimal divisors. G5 M4 Lesson 31: Divide decimal dividends by non-unit decimal divisors. G5 M6 Lesson 26: Solidify writing and interpreting numerical expressions. G5 M6 Lesson 28: Solidify fluency with Grade 5 skills.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.CE.3.c.ii quotients may include whole numbers, tenths, hundredths, or thousandths;	G5 M1 Lesson 1: Reason concretely and pictorially using place value understanding to relate adjacent base ten units from millions to thousandths. G5 M1 Lesson 2: Reason abstractly using place value understanding to relate adjacent base ten units from millions to thousandths. G5 M1 Topic F: Dividing Decimals G5 M2 Topic E: Mental Strategies for Multi-Digit Whole Number Division G5 M2 Topic F: Partial Quotients and Multi-Digit Whole Number Division G5 M2 Topic G: Partial Quotients and Multi-Digit Decimal Division G5 M2 Topic H: Measurement Word Problems with Multi-Digit Division G5 M4 Lesson 29: Connect division by a unit fraction to division by 1 tenth and 1 hundredth. G5 M4 Lesson 30: Divide decimal dividends by non-unit decimal divisors. G5 M4 Lesson 31: Divide decimal dividends by non-unit decimal divisors. G5 M6 Lesson 26: Solidify writing and interpreting numerical expressions. G5 M6 Lesson 28: Solidify fluency with Grade 5 skills.
5.CE.3.c.iii divisors are limited to a single digit whole number or a decimal expressed as tenths; and	G5 M1 Topic F: Dividing Decimals G5 M2 Lesson 24: Divide decimal dividends by multiples of 10, reasoning about the placement of the decimal point and making connections to a written method.
5.CE.3.c.iv no more than one additional zero will need to be annexed.	G5 M1 Topic F: Dividing Decimals G5 M2 Topic G: Partial Quotients and Multi-Digit Decimal Division

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.CE.3.d Solve single-step and multistep contextual problems involving addition, subtraction, and multiplication of decimals by applying strategies (e.g., estimation, modeling) and algorithms, including the standard algorithm.	G5 M1 Topic D: Adding and Subtracting Decimals G5 M1 Topic E: Multiplying Decimals G5 M1 Topic F: Dividing Decimals G5 M2 Topic H: Measurement Word Problems with Multi-Digit Division
5.CE.3.e Solve single-step contextual problems involving division with decimals by applying strategies (e.g., estimation, modeling) and algorithms, including the standard algorithm.	G5 M1 Topic F: Dividing Decimals G5 M4 Lesson 29: Connect division by a unit fraction to division by 1 tenth and 1 hundredth. G5 M4 Lesson 30: Divide decimal dividends by non-unit decimal divisors. G5 M4 Lesson 31: Divide decimal dividends by non-unit decimal divisors.

Computation and Estimation

5.CE.4 The student will simplify numerical expressions with whole numbers using the order of operations.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.CE.4.a Use order of operations to simplify numerical expressions with whole numbers, limited to addition, subtraction, multiplication, and division in which:	G6 M4 Lesson 5: Exponents

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.CE.4.a.i expressions may contain no more than one set of parentheses;	G5 M2 Lesson 3: Write and interpret numerical expressions, and compare expressions using a visual model. G6 M4 Lesson 6: The Order of Operations
5.CE.4.a.ii simplification will be limited to five whole numbers and four operations in any combination of addition, subtraction, multiplication, or division;	G5 M2 Lesson 3: Write and interpret numerical expressions, and compare expressions using a visual model. G6 M4 Lesson 6: The Order of Operations
5.CE.4.a.iii whole numbers will be limited to two digits or less; and	G5 M2 Lesson 3: Write and interpret numerical expressions, and compare expressions using a visual model. G6 M4 Lesson 6: The Order of Operations
5.CE.4.a.iv expressions should not include braces, brackets, or fraction bars.	G5 M2 Lesson 3: Write and interpret numerical expressions, and compare expressions using a visual model. G6 M4 Lesson 6: The Order of Operations *Supplemental material is necessary to fully address this standard.*
5.CE.4.b Given a whole number numerical expression involving more than one operation, describe which operation is completed first, which is second, and which is third.	G5 M2 Lesson 3: Write and interpret numerical expressions, and compare expressions using a visual model. G6 M4 Lesson 6: The Order of Operations

Measurement and Geometry

5.MG.1 The student will reason mathematically to solve problems, including those in context, that involve length, mass, and liquid volume using metric units.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.MG.1.a Determine the most appropriate unit of measure to use in a contextual problem that involves metric units:	*Supplemental material is necessary to address this standard.*
5.MG.1.a.i length (millimeters, centimeters, meters, and kilometers);	*Supplemental material is necessary to address this standard.*
5.MG.1.a.ii mass (grams and kilograms); and	*Supplemental material is necessary to address this standard.*
5.MG.1.a.iii liquid volume (milliliters and liters).	*Supplemental material is necessary to address this standard.*
5.MG.1.b Estimate and measure to solve contextual problems that involve metric units:	*Supplemental material is necessary to fully address this standard.*
5.MG.1.b.i length (millimeters, centimeters, and meters);	G5 M1 Lesson 4: Use exponents to denote powers of 10 with application to metric conversions. G5 M2 Topic D: Measurement Word Problems with Whole Number and Decimal Multiplication G5 M4 Lesson 8: Relate a fraction of a set to the repeated addition interpretation of fraction multiplication. G5 M4 Lesson 9: Find a fraction of a measurement, and solve word problems. *Supplemental material is necessary to fully address this standard.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.MG.1.b.ii mass (grams and kilograms); and	G5 M2 Topic D: Measurement Word Problems with Whole Number and Decimal Multiplication G5 M4 Lesson 8: Relate a fraction of a set to the repeated addition interpretation of fraction multiplication. G5 M4 Lesson 9: Find a fraction of a measurement, and solve word problems. *Supplemental material is necessary to fully address this standard.*
5.MG.1.b.iii liquid volume (milliliters and liters).	G5 M2 Topic D: Measurement Word Problems with Whole Number and Decimal Multiplication G5 M4 Lesson 8: Relate a fraction of a set to the repeated addition interpretation of fraction multiplication. G5 M4 Lesson 9: Find a fraction of a measurement, and solve word problems. *Supplemental material is necessary to fully address this standard.*
5.MG.1.c Given the equivalent metric measure of one unit, in a contextual problem, determine the equivalent measurement within the metric system:	*This standard is fully addressed by the lessons aligned to its subsections.*
5.MG.1.c.i length (millimeters, centimeters, meters, and kilometers);	G4 M2 Topic B: Application of Metric Unit Conversions G5 M1 Lesson 4: Use exponents to denote powers of 10 with application to metric conversions. G5 M2 Topic D: Measurement Word Problems with Whole Number and Decimal Multiplication G5 M4 Lesson 8: Relate a fraction of a set to the repeated addition interpretation of fraction multiplication. G5 M4 Lesson 9: Find a fraction of a measurement, and solve word problems. G5 M4 Lesson 19: Convert measures involving whole numbers, and solve multi-step word problems. G5 M4 Lesson 20: Convert mixed unit measurements, and solve multi-step word problems.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.MG.1.c.i *continued*	G5 M6 Lesson 21: Make sense of complex, multi-step problems, and persevere in solving them. Share and critique peer solutions. G5 M6 Lesson 28: Solidify fluency with Grade 5 skills.
5.MG.1.c.ii mass (grams and kilograms); and	G4 M2 Topic B: Application of Metric Unit Conversions G5 M1 Lesson 4: Use exponents to denote powers of 10 with application to metric conversions. G5 M2 Topic D: Measurement Word Problems with Whole Number and Decimal Multiplication G5 M4 Lesson 8: Relate a fraction of a set to the repeated addition interpretation of fraction multiplication. G5 M4 Lesson 9: Find a fraction of a measurement, and solve word problems. G5 M4 Lesson 20: Convert mixed unit measurements, and solve multi-step word problems. G5 M6 Lesson 21: Make sense of complex, multi-step problems, and persevere in solving them. Share and critique peer solutions. G5 M6 Lesson 28: Solidify fluency with Grade 5 skills.
5.MG.1.c.iii liquid volume (milliliters and liters).	G4 M2 Topic B: Application of Metric Unit Conversions G5 M1 Lesson 4: Use exponents to denote powers of 10 with application to metric conversions. G5 M2 Topic D: Measurement Word Problems with Whole Number and Decimal Multiplication G5 M4 Lesson 8: Relate a fraction of a set to the repeated addition interpretation of fraction multiplication. G5 M4 Lesson 9: Find a fraction of a measurement, and solve word problems. G5 M4 Lesson 20: Convert mixed unit measurements, and solve multi-step word problems. G5 M6 Lesson 21: Make sense of complex, multi-step problems, and persevere in solving them. Share and critique peer solutions. G5 M6 Lesson 28: Solidify fluency with Grade 5 skills.

Measurement and Geometry

5.MG.2 The student will use multiple representations to solve problems, including those in context, involving perimeter, area, and volume.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.MG.2.a Investigate and develop a formula for determining the area of a right triangle.	G6 M5 Topic A: Area of Triangles, Quadrilaterals, and Polygons G6 M5 Lesson 8: Drawing Polygons in the Coordinate Plane G6 M5 Lesson 9: Determining Perimeter and Area of Polygons on the Coordinate Plane
5.MG.2.b Estimate and determine the area of a right triangle, with diagrams, when the base and the height are given in whole number units, in metric or U.S. Customary units, and record the solution with the appropriate unit of measure (e.g., 16 square inches).	G6 M5 Topic A: Area of Triangles, Quadrilaterals, and Polygons G6 M5 Lesson 8: Drawing Polygons in the Coordinate Plane G6 M5 Lesson 9: Determining Perimeter and Area of Polygons on the Coordinate Plane
5.MG.2.c Describe volume as a measure of capacity and give examples of volume as a measurement in contextual situations.	G5 M5 Lesson 1: Explore volume by building with and counting unit cubes. G5 M5 Lesson 5: Use multiplication to connect volume as packing with volume as filling. G5 M6 Lesson 29: Solidify the vocabulary of geometry. G5 M6 Lesson 30: Solidify the vocabulary of geometry.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.MG.2.d Investigate and develop a formula for determining the volume of rectangular prisms using concrete objects.	G5 M5 Topic A: Concepts of Volume G5 M5 Lesson 4: Use multiplication to calculate volume. G5 M5 Lesson 5: Use multiplication to connect volume as packing with volume as filling. G5 M5 Lesson 7: Solve word problems involving the volume of rectangular prisms with whole number edge lengths. G5 M6 Lesson 28: Solidify fluency with Grade 5 skills. G5 M6 Lesson 33: Design and construct boxes to house materials for summer use. G5 M6 Lesson 34: Design and construct boxes to house materials for summer use.
5.MG.2.e Solve problems, including those in context, to estimate and determine the volume of a rectangular prism using concrete objects, diagrams, and formulas when the length, width, and height are given in whole number units. Record the solution with the appropriate unit of measure (e.g., 12 cubic inches).	G5 M5 Lesson 2: Find the volume of a right rectangular prism by packing with cubic units and counting. G5 M5 Lesson 3: Compose and decompose right rectangular prisms using layers. G5 M5 Lesson 4: Use multiplication to calculate volume. G5 M5 Lesson 5: Use multiplication to connect volume as packing with volume as filling. G5 M5 Lesson 6: Find the total volume of solid figures composed of two non-overlapping rectangular prisms. G5 M5 Lesson 7: Solve word problems involving the volume of rectangular prisms with whole number edge lengths. G5 M6 Lesson 28: Solidify fluency with Grade 5 skills. G5 M6 Lesson 33: Design and construct boxes to house materials for summer use. G5 M6 Lesson 34: Design and construct boxes to house materials for summer use.
5.MG.2.f Identify whether the application of the concept of perimeter, area, or volume is appropriate for a given situation.	*Supplemental material is necessary to address this standard.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.MG.2.g Solve contextual problems that involve perimeter, area, and volume in standard units of measure.	G5 M5 Lesson 3: Compose and decompose right rectangular prisms using layers. G5 M5 Topic B: Volume and the Operations of Multiplication and Addition G5 M5 Lesson 10: Find the area of rectangles with whole-by-mixed and whole-by-fractional number side lengths by tiling, record by drawing, and relate to fraction multiplication. G5 M5 Lesson 11: Find the area of rectangles with mixed-by-mixed and fraction-by-fraction side lengths by tiling, record by drawing, and relate to fraction multiplication. G5 M5 Lesson 12: Measure to find the area of rectangles with fractional side lengths. G5 M5 Lesson 13: Multiply mixed number factors, and relate to the distributive property and the area model. G5 M6 Lesson 28: Solidify fluency with Grade 5 skills. G5 M6 Lesson 33: Design and construct boxes to house materials for summer use. G5 M6 Lesson 34: Design and construct boxes to house materials for summer use.

Measurement and Geometry

5.MG.3 The student will classify and measure angles and triangles, and solve problems, including those in context.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.MG.3.a Classify angles as right, acute, obtuse, or straight and justify reasoning.	G4 M4 Topic A: Lines and Angles G4 M4 Lesson 7: Measure and draw angles. Sketch given angle measures, and verify with a protractor. G4 M4 Lesson 14: Define and construct triangles from given criteria. Explore symmetry in triangles. G4 M4 Lesson 15: Classify quadrilaterals based on parallel and perpendicular lines and the presence or absence of angles of a specified size. G4 M4 Lesson 16: Reason about attributes to construct quadrilaterals on square or triangular grid paper.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.MG.3.a *continued*	G4 M7 Lesson 16: Create and determine the area of composite figures. G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary. G5 M6 Lesson 13: Construct parallel line segments on a rectangular grid. G5 M6 Lesson 15: Construct perpendicular line segments on a rectangular grid.
5.MG.3.b Classify triangles as right, acute, or obtuse and equilateral, scalene, or isosceles and justify reasoning.	G4 M4 Lesson 13: Analyze and classify triangles based on side length, angle measure, or both. G4 M4 Lesson 14: Define and construct triangles from given criteria. Explore symmetry in triangles. G4 M4 Lesson 15: Classify quadrilaterals based on parallel and perpendicular lines and the presence or absence of angles of a specified size. G4 M4 Lesson 16: Reason about attributes to construct quadrilaterals on square or triangular grid paper. G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.
5.MG.3.c Identify congruent sides and right angles using geometric markings to denote properties of triangles.	G4 M4 Topic A: Lines and Angles G4 M4 Lesson 14: Define and construct triangles from given criteria. Explore symmetry in triangles. G4 M4 Lesson 15: Classify quadrilaterals based on parallel and perpendicular lines and the presence or absence of angles of a specified size. G4 M4 Lesson 16: Reason about attributes to construct quadrilaterals on square or triangular grid paper. G4 M7 Lesson 16: Create and determine the area of composite figures. G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary. G5 M6 Lesson 13: Construct parallel line segments on a rectangular grid. G5 M6 Lesson 15: Construct perpendicular line segments on a rectangular grid.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.MG.3.d Compare and contrast the properties of triangles.	G4 M4 Lesson 13: Analyze and classify triangles based on side length, angle measure, or both. G4 M4 Lesson 14: Define and construct triangles from given criteria. Explore symmetry in triangles. G4 M4 Lesson 15: Classify quadrilaterals based on parallel and perpendicular lines and the presence or absence of angles of a specified size. G4 M4 Lesson 16: Reason about attributes to construct quadrilaterals on square or triangular grid paper. G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.
5.MG.3.e Identify the appropriate tools (e.g., protractor, straightedge, angle ruler, available technology) to measure and draw angles.	G4 M4 Topic B: Angle Measurement G4 M7 Lesson 16: Create and determine the area of composite figures. G4 M7 Lesson 17: Practice and solidify Grade 4 fluency. G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.
5.MG.3.f Measure right, acute, obtuse, and straight angles, using appropriate tools, and identify measures in degrees.	G4 M4 Topic B: Angle Measurement G4 M7 Lesson 16: Create and determine the area of composite figures. G4 M7 Lesson 17: Practice and solidify Grade 4 fluency. G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.
5.MG.3.g Use models to prove that the sum of the interior angles of a triangle is 180 degrees and use the relationship to determine an unknown angle measure in a triangle.	G4 M4 Topic C: Problem Solving with the Addition of Angle Measures G4 M7 Lesson 17: Practice and solidify Grade 4 fluency.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.MG.3.h Solve addition and subtraction contextual problems to determine unknown angle measures on a diagram.	G4 M4 Topic C: Problem Solving with the Addition of Angle Measures G4 M7 Lesson 17: Practice and solidify Grade 4 fluency.

Probability and Statistics

5.PS.1 The student will apply the data cycle (formulate questions; collect or acquire data; organize and represent data; and analyze data and communicate results) with a focus on line plots (dot plots) and stem-and-leaf plots.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.PS.1.a Formulate questions that require the collection or acquisition of data.	G6 M6 Lesson 1: Posing Statistical Questions
5.PS.1.b Determine the data needed to answer a formulated question and collect or acquire existing data (limited to 30 or fewer data points) using various methods (e.g., polls, observations, measurements, experiments).	G5 M4 Topic A: Line Plots of Fraction Measurements G6 M6 Lesson 1: Posing Statistical Questions *Supplemental material is necessary to fully address this standard.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.PS.1.c Organize and represent a data set using a line plot (dot plot) with a title, labeled axes, and a key, with and without the use of technology tools. Lines plots (dot plots) may contain whole numbers, fractions, or decimals.	G5 M4 Topic A: Line Plots of Fraction Measurements G6 M6 Lesson 2: Displaying a Data Distribution G6 M6 Lesson 3: Creating a Dot Plot G6 M6 Lesson 4: Creating a Histogram G6 M6 Lesson 5: Describing a Distribution Displayed in a Histogram G6 M6 Lesson 6: Describing the Center of a Distribution Using the Mean G6 M6 Lesson 7: The Mean as a Balance Point G6 M6 Lesson 8: Variability in a Data Distribution G6 M6 Lesson 10: Describing Distributions Using the Mean and MAD G6 M6 Lesson 11: Describing Distributions Using the Mean and MAD G6 M6 Lesson 14: Summarizing a Distribution Using a Box Plot G6 M6 Lesson 15: More Practice with Box Plots G6 M6 Lesson 16: Understanding Box Plots G6 M6 Lesson 17: Developing a Statistical Project G6 M6 Lesson 18: Connecting Graphical Representations and Numerical Summaries G6 M6 Lesson 20: Describing Center, Variability, and Shape of a Data Distribution from a Graphic Representation G6 M6 Lesson 21: Summarizing a Data Distribution by Describing Center, Variability, and Shape G6 M6 Lesson 22: Presenting a Summary of a Statistical Project *Supplemental material is necessary to address representing data sets by using line plots that include keys and by using technology.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.PS.1.d Organize and represent numerical data using a stem-and-leaf plot with a title and key, where the stems are listed in ascending order and the leaves are in ascending order, with or without commas between the leaves.	*Supplemental material is necessary to address this standard.*
5.PS.1.e Analyze data represented in line plots (dot plots) and stem-and-leaf plots and communicate results orally and in writing:	*This standard is addressed by the lessons aligned to its subsections.*
5.PS.1.e.i describe the characteristics of the data represented in a line plot (dot plot) and stem-and-leaf plot as a whole (e.g., the shape and spread of the data);	G5 M4 Topic A: Line Plots of Fraction Measurements G6 M6 Lesson 2: Displaying a Data Distribution G6 M6 Lesson 3: Creating a Dot Plot G6 M6 Lesson 4: Creating a Histogram G6 M6 Lesson 5: Describing a Distribution Displayed in a Histogram G6 M6 Topic B: Summarizing a Distribution that Is Approximately Symmetric Using the Mean and Mean Absolute Deviation G6 M6 Topic C: Summarizing a Distribution that is Skewed Using the Median and the Interquartile Range G6 M6 Topic D: Summarizing and Describing Distributions *Supplemental material is necessary to address stem-and-leaf plots.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.PS.1.e.ii make inferences about data represented in line plots (dot plots) and stem-and-leaf plots (e.g., based on a line plot (dot plot) of the number of books students in a bus line have in their backpack, every student will have from two to four books in their backpack);	G5 M4 Topic A: Line Plots of Fraction Measurements G6 M6 Lesson 2: Displaying a Data Distribution G6 M6 Lesson 3: Creating a Dot Plot G6 M6 Lesson 4: Creating a Histogram G6 M6 Lesson 5: Describing a Distribution Displayed in a Histogram G6 M6 Topic B: Summarizing a Distribution that Is Approximately Symmetric Using the Mean and Mean Absolute Deviation G6 M6 Topic C: Summarizing a Distribution that is Skewed Using the Median and the Interquartile Range G6 M6 Topic D: Summarizing and Describing Distributions *Supplemental material is necessary to address stem-and-leaf plots.*
5.PS.1.e.iii identify parts of the data that have special characteristics and explain the meaning of the greatest, the least, or the same (e.g., the stem-and-leaf plot shows that the same number of students scored in the 90s as scored in the 70s);	G6 M6 Lesson 2: Displaying a Data Distribution G6 M6 Lesson 3: Creating a Dot Plot G6 M6 Lesson 4: Creating a Histogram G6 M6 Lesson 5: Describing a Distribution Displayed in a Histogram G6 M6 Topic B: Summarizing a Distribution that Is Approximately Symmetric Using the Mean and Mean Absolute Deviation G6 M6 Topic C: Summarizing a Distribution that is Skewed Using the Median and the Interquartile Range G6 M6 Topic D: Summarizing and Describing Distributions *Supplemental material is necessary to address stem-and-leaf plots.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.PS.1.e.iv draw conclusions about the data and make predictions based on the data to answer questions; and	G6 M6 Lesson 2: Displaying a Data Distribution G6 M6 Lesson 3: Creating a Dot Plot G6 M6 Lesson 4: Creating a Histogram G6 M6 Lesson 5: Describing a Distribution Displayed in a Histogram G6 M6 Topic B: Summarizing a Distribution that Is Approximately Symmetric Using the Mean and Mean Absolute Deviation G6 M6 Topic C: Summarizing a Distribution that is Skewed Using the Median and the Interquartile Range G6 M6 Topic D: Summarizing and Describing Distributions *Supplemental material is necessary to address stem-and-leaf plots.*
5.PS.1.e.v solve single-step and multistep addition and subtraction problems using data from line plots (dot plots) and stem-and-leaf plots.	G5 M4 Topic A: Line Plots of Fraction Measurements *Supplemental material is necessary to address stem-and-leaf plots.*

Probability and Statistics

5.PS.2 The student will solve contextual problems using measures of center and the range.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.PS.2.a Describe mean as fair share.	G6 M6 Lesson 7: The Mean as a Balance Point G6 M6 Lesson 8: Variability in a Data Distribution G6 M6 Lesson 9: The Mean Absolute Deviation (MAD) G6 M6 Lesson 10: Describing Distributions Using the Mean and MAD G6 M6 Lesson 11: Describing Distributions Using the Mean and MAD G6 M6 Topic C: Summarizing a Distribution that is Skewed Using the Median and the Interquartile Range G6 M6 Topic D: Summarizing and Describing Distributions
5.PS.2.b Describe and determine the mean of a set of data values representing data from a given context as a measure of center.	G6 M6 Lesson 7: The Mean as a Balance Point G6 M6 Lesson 8: Variability in a Data Distribution G6 M6 Lesson 9: The Mean Absolute Deviation (MAD) G6 M6 Lesson 10: Describing Distributions Using the Mean and MAD G6 M6 Lesson 11: Describing Distributions Using the Mean and MAD G6 M6 Topic C: Summarizing a Distribution that is Skewed Using the Median and the Interquartile Range G6 M6 Topic D: Summarizing and Describing Distributions

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.PS.2.c Describe and determine the median of a set of data values representing data from a given context as a measure of center.	G6 M6 Lesson 7: The Mean as a Balance Point G6 M6 Lesson 8: Variability in a Data Distribution G6 M6 Lesson 9: The Mean Absolute Deviation (MAD) G6 M6 Lesson 10: Describing Distributions Using the Mean and MAD G6 M6 Lesson 11: Describing Distributions Using the Mean and MAD G6 M6 Topic C: Summarizing a Distribution that is Skewed Using the Median and the Interquartile Range G6 M6 Topic D: Summarizing and Describing Distributions
5.PS.2.d Describe and determine the mode of a set of data values representing data from a given context as a measure of center.	*Supplemental material is necessary to address this standard.*
5.PS.2.e Describe and determine the range of a set of data values representing data from a given context as a measure of spread.	G6 M6 Lesson 2: Displaying a Data Distribution G6 M6 Lesson 3: Creating a Dot Plot G6 M6 Lesson 4: Creating a Histogram G6 M6 Lesson 5: Describing a Distribution Displayed in a Histogram G6 M6 Topic B: Summarizing a Distribution that Is Approximately Symmetric Using the Mean and Mean Absolute Deviation G6 M6 Topic C: Summarizing a Distribution that is Skewed Using the Median and the Interquartile Range G6 M6 Topic D: Summarizing and Describing Distributions

Probability and Statistics

5.PS.3 The student will determine the probability of an outcome by constructing a model of a sample space and using the Fundamental (Basic) Counting Principle.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.PS.3.a Determine the probability of an outcome by constructing a sample space (with a total of 24 or fewer equally likely possible outcomes), using a tree diagram, list, or chart to represent and determine all possible outcomes.	*Supplemental material is necessary to address this standard.*
5.PS.3.b Determine the number of possible outcomes by using the Fundamental (Basic) Counting Principle.	*Supplemental material is necessary to address this standard.*

Patterns, Functions, and Algebra

5.PFA.1 The student will identify, describe, extend, and create increasing and decreasing patterns with whole numbers, fractions, and decimals, including those in context, using various representations.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.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, function machines).	G5 M6 Topic B: Patterns in the Coordinate Plane and Graphing Number Patterns from Rules G5 M6 Lesson 18: Draw symmetric figures on the coordinate plane. G5 M6 Lesson 31: Explore the Fibonacci sequence. G5 M6 Lesson 32: Explore patterns in saving money.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.PFA.1.b Analyze an increasing or decreasing single-operation numerical pattern found in lists, input/output tables, and function machines, and generalize the change to identify the rule, extend the pattern, or identify missing terms. (Patterns will be limited to addition, subtraction, multiplication, and division of whole numbers; addition and subtraction of fractions with like denominators of 12 or less; and addition and subtraction of decimals expressed in tenths or hundredths).	G5 M6 Topic B: Patterns in the Coordinate Plane and Graphing Number Patterns from Rules G5 M6 Lesson 18: Draw symmetric figures on the coordinate plane. G5 M6 Lesson 31: Explore the Fibonacci sequence. G5 M6 Lesson 32: Explore patterns in saving money.
5.PFA.1.c Solve contextual problems that involve identifying, describing, and extending increasing and decreasing patterns using single-operation input and output rules (limited to addition, subtraction, multiplication, and division of whole numbers; addition and subtraction of fractions with like denominators of 12 or less; and addition and subtraction of decimals expressed in tenths or hundredths).	G5 M6 Topic B: Patterns in the Coordinate Plane and Graphing Number Patterns from Rules G5 M6 Lesson 18: Draw symmetric figures on the coordinate plane. G5 M6 Lesson 31: Explore the Fibonacci sequence. G5 M6 Lesson 32: Explore patterns in saving money.

Patterns, Functions, and Algebra

5.PFA.2 The student will investigate and use variables in contextual problems.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math*
5.PFA.2.a Describe the concept of a variable (presented as a box, letter, or other symbol) as a representation of an unknown quantity.	G6 M4 Topic C: Replacing Letters and Numbers
5.PFA.2.b Write an equation (with a single variable that represents an unknown quantity and one operation) from a contextual situation, using addition, subtraction, multiplication, or division.	G6 M4 Topic F: Writing and Evaluating Expressions and Formulas G6 M4 Topic G: Solving Equations G6 M4 Topic H: Applications of Equations
5.PFA.2.c Use an expression with a variable to represent a given verbal expression involving one operation (e.g., "5 more than a number" can be represented by $y + 5$).	G6 M4 Lesson 9: Writing Addition and Subtraction Expressions G6 M4 Lesson 10: Writing and Expanding Multiplication Expressions G6 M4 Lesson 13: Writing Division Expressions G6 M4 Lesson 14: Writing Division Expressions
5.PFA.2.d Create and write a word problem to match a given equation with a single variable and one operation.	*Supplemental material is necessary to address this standard.*