Grade 3 | Mathematics Standards of Learning for Virginia Public Schools Correlation to *Eureka Math²®*

When the original *Eureka Math®* curriculum was released, it quickly became the most widely used K–5 mathematics curriculum in the country. Now, the Great Minds® teacher–writers have created *Eureka Math²®*, a groundbreaking new curriculum that helps teachers deliver *exponentially better* math instruction while still providing students with the same deep understanding of and fluency in math. *Eureka Math²* carefully sequences mathematical content to maximize vertical alignment—a principle tested and proven to be essential in students' mastery of math—from kindergarten through high school.

While this innovative new curriculum includes all the trademark *Eureka Math* aha moments that have been delighting students and teachers for years, it also boasts these exciting new features:

Teachability

Eureka Math² employs streamlined materials that allow teachers to plan more efficiently and focus their energy on delivering high-quality instruction that meets the individual needs of their students. Differentiation suggestions, slide decks, digital interactives, and multiple forms of assessment are just a few of the resources built right into the teacher materials.

Accessibility

Eureka Math² incorporates Universal Design for Learning principles so all learners can access the mathematics and take on challenging math concepts. Student supports are built into the instructional design and are clearly identified in the *Teach* book. Further, the curriculum carries a focus on readability. By eliminating unnecessary words and using simple, clear sentences, the *Eureka Math²* teacher–writers have created one of the most readable mathematics curricula on the market. The curriculum's readability and accessibility help all students see themselves as mathematical thinkers and doers who are fully capable of owning their mathematics learning.

Digital Engagement

The digital elements of *Eureka Math²* add to students' engagement with the math. The curriculum provides teachers with digital slides for each lesson. In addition, each grade level includes wordless videos that spark students' interest and curiosity. Students at all levels work through mathematical explorations that help lead to their own mathematical discoveries. Digital lessons and videos provide opportunities for students to wonder, explore, and make sense of mathematics, which contributes to the development of a strong, positive mathematical identity.

Mathematical Process Goals for Students	Aligned Components of *Eureka Math²*
Mathematical Problem Solving	Lessons in every module engage students in mathematical processes. These are indicated in margin notes included with every lesson.
Mathematical Communication	Lessons in every module engage students in mathematical processes. These are indicated in margin notes included with every lesson.
Mathematical Reasoning	Lessons in every module engage students in mathematical processes. These are indicated in margin notes included with every lesson.
Mathematical Connections	Lessons in every module engage students in mathematical processes. These are indicated in margin notes included with every lesson.
Mathematical Representations	Lessons in every module engage students in mathematical processes. These are indicated in margin notes included with every lesson.

Number and Number Sense

3.NS.1 The student will use place value understanding to read, write, and determine the place and value of each digit in a whole number, up to six digits, with and without models.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.NS.1.a Read and write six-digit whole numbers in standard form, expanded form, and word form.	4 M1 Lesson 5: Organize, count, and represent a collection of objects. 4 M1 Lesson 7: Write numbers to 1,000,000 in unit form and expanded form by using place value structure. 4 M1 Lesson 8: Write numbers to 1,000,000 in standard form and word form. 4 M1 Lesson 10: Name numbers by using place value understanding.
3.NS.1.b 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 six-digit whole number (e.g., in 165,724, the 5 represents 5 thousands and its value is 5,000).	4 M1 Lesson 5: Organize, count, and represent a collection of objects. 4 M1 Lesson 7: Write numbers to 1,000,000 in unit form and expanded form by using place value structure. 4 M1 Lesson 8: Write numbers to 1,000,000 in standard form and word form. 4 M1 Lesson 10: Name numbers by using place value understanding.
3.NS.1.c Compose, decompose, and represent numbers up to 9,999 in multiple ways, according to place value (e.g., 256 can be 1 hundred, 14 tens, 16 ones, but also 25 tens, 6 ones), with and without models.	4 M1 Lesson 10: Name numbers by using place value understanding.

Number and Number Sense

3.NS.2 The student will demonstrate an understanding of the base 10 system to compare and order whole numbers up to 9,999.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.NS.2.a Compare two whole numbers, each 9,999 or less, using symbols (>, <, =, ≠) and/or words (*greater than*, *less than*, *equal to*, *not equal to*), with and without models.	4 M1 Lesson 9: Compare numbers within 1,000,000 using >, =, and <.
3.NS.2.b Order up to three whole numbers, each 9,999 or less, represented with and without models, from least to greatest and greatest to least.	4 M1 Lesson 9: Compare numbers within 1,000,000 using >, =, and <.

Number and Number Sense

3.NS.3 The student will use mathematical reasoning and justification to represent and compare fractions (proper and improper) and mixed numbers with denominators of 2, 3, 4, 5, 6, 8, and 10, including those in context.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.NS.3.a Represent, name, and write a given fraction (proper or improper) or mixed number with denominators of 2, 3, 4, 5, 6, 8, and 10 using:	*This standard is addressed by the lessons aligned to its subsections.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.NS.3.a.i region/area models (e.g., pie pieces, pattern blocks, geoboards);	3 M5 Lesson 1: Partition a whole into equal parts and name the fractional unit. 3 M5 Lesson 2: Partition different wholes into fractional units correctly. 3 M5 Lesson 4: Partition a whole into fractional units pictorially and identify the unit fraction. 3 M5 Lesson 5: Partition a whole into fractional units and write fractions in fraction form. 3 M5 Lesson 6: Build non-unit fractions less than 1 from unit fractions concretely. 3 M5 Lesson 7: Identify and represent a whole as two parts: a unit fraction and a non-unit fraction. 3 M5 Lesson 8: Identify and represent a whole as two non-unit fractions. 3 M5 Lesson 27: Apply fraction concepts to complete a multi-part task. *Supplemental material is necessary to fully address mixed numbers.*
3.NS.3.a.ii length models (e.g., paper fraction strips, fraction bars, rods, number lines); and	3 M5 Lesson 3: Partition a whole into fractional units by folding fraction strips. 3 M5 Lesson 11: Locate fractions from 0 to 1 on a number line by using fraction tiles. 3 M5 Lesson 12: Represent fractions from 0 to 1 on a number line. 3 M5 Lesson 15: Identify fractions on a ruler as numbers on a number line. 3 M5 Lesson 18: Compare fractions with like units by using a number line. 3 M5 Lesson 26: Create a ruler with 1-inch, half-inch, and quarter-inch intervals. 3 M5 Lesson 27: Apply fraction concepts to complete a multi-part task. *Supplemental material is necessary to fully address mixed numbers.*
3.NS.3.a.iii set models (e.g., chips, counters, cubes).	*Supplemental material is necessary to address this standard.*
3.NS.3.b Identify a fraction represented by a model as the sum of unit fractions.	4 M4 Lesson 1: Decompose whole numbers into a sum of unit fractions. 4 M4 Lesson 2: Decompose fractions into a sum of unit fractions.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.NS.3.c Use a model of a fraction greater than one to count the fractional parts to name and write it as an improper fraction and as a mixed number (e.g., $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{4}{4}, \frac{5}{4} = 1\frac{1}{4}$).	4 M4 Topic A: Fraction Decomposition and Equivalence 4 M4 Lesson 7: Rename fractions as a sum of equivalent smaller unit fractions. 4 M4 Topic D: Add and Subtract Fractions
3.NS.3.d Compose and decompose fractions (proper and improper) with denominators of $2, 3, 4, 5, 6, 8$, and 10 in multiple ways (e.g., $\frac{7}{4} = \frac{4}{4} + \frac{3}{4}$ or $\frac{4}{6} = \frac{3}{6} + \frac{1}{6} = \frac{2}{6} + \frac{2}{6}$) with models.	4 M4 Topic A: Fraction Decomposition and Equivalence 4 M4 Lesson 7: Rename fractions as a sum of equivalent smaller unit fractions. 4 M4 Topic D: Add and Subtract Fractions
3.NS.3.e Compare a fraction, less than or equal to one, to the benchmarks of $0, \frac{1}{2}$, and 1 using area/region models, length models, and without models.	3 M5 Lesson 9: Compare unit fractions by reasoning about their size concretely.
3.NS.3.f Compare two fractions (proper or improper) and/or mixed numbers with like numerators of $2, 3, 4, 5, 6, 8$, and 10 (e.g., $\frac{2}{3} > \frac{2}{8}$) using words (*greater than*, *less than*, *equal to*) and/or symbols ($>, <, =$), using area/region models, length models, and without models.	3 M5 Lesson 10: Compare non-unit fractions less than 1 with the same numerator by using tape diagrams. 3 M5 Lesson 19: Compare fractions with unlike units but the same numerator by using number lines. 3 M5 Lesson 27: Apply fraction concepts to complete a multi-part task.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.NS.3.g Compare two fractions (proper or improper) and/or mixed numbers with like denominators of 2, 3, 4, 5, 6, 8, and 10 (e.g., $\frac{3}{6} < \frac{4}{6}$) using words (*greater than*, *less than*, *equal to*) and/or symbols ($>$, $<$, $=$), using area/region models, length models, and without models.	3 M5 Lesson 18: Compare fractions with like units by using a number line. 3 M5 Lesson 27: Apply fraction concepts to complete a multi-part task.
3.NS.3.h Represent equivalent fractions with denominators of 2, 3, 4, 5, 6, 8, or 10, using region/area models and length models.	3 M5 Lesson 13: Identify equivalent fractions from 0 to 1 with tape diagrams and on number lines. 3 M5 Lesson 14: Recognize that equivalent fractions share the same location on a number line. 3 M5 Lesson 16: Measure lengths and record data on a line plot. 3 M5 Lesson 17: Represent fractions greater than 1 on a number line and identify fractions equivalent to whole numbers. 3 M5 Lesson 22: Identify fractions equivalent to whole numbers by using number lines. 3 M5 Lesson 23: Reason to find fractions equivalent to whole numbers by using patterns and number lines. 3 M5 Lesson 24: Generate equivalent fractions greater than 1 by using a number line. 3 M5 Lesson 26: Create a ruler with 1-inch, half-inch, and quarter-inch intervals.

Number and Number Sense

3.NS.4 The student will solve problems, including those in context, that involve counting, comparing, representing, and making change for money amounts up to $5.00.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.NS.4.a Determine the value of a collection of bills and coins whose total is $5.00 or less.	2 M5 Topic A: Problem Solving with Coins and Bills 3 M6 Lesson 7: Count coins and create money word problems.
3.NS.4.b Construct a set of bills and coins to total a given amount of money whose value is $5.00 or less.	*Supplemental material is necessary to address this standard.*
3.NS.4.c Compare the values of two sets of coins or two sets of bills and coins, up to $5.00, with words (*greater than*, *less than*, *equal to*) and/or symbols (>, <, =) using concrete or pictorial models.	*Supplemental material is necessary to address this standard.*
3.NS.4.d Solve contextual problems to make change from $5.00 or less by using counting on or counting back strategies with concrete or pictorial models.	*Supplemental material is necessary to address this standard.*

Computation and Estimation

3.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 where addends and minuends do not exceed 1,000.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.CE.1.a Determine and justify whether an estimate or an exact answer is appropriate when solving single-step and multistep contextual problems involving addition and subtraction, where addends and minuends do not exceed 1,000.	3 M2 Lesson 12: Estimate sums and differences by rounding. *Supplemental material is necessary to fully address this standard.*
3.CE.1.b Apply strategies (e.g., rounding to the nearest 10 or 100, using compatible numbers, using other number relationships) to estimate a solution for single-step or multistep addition or subtraction problems, including those in context, where addends or minuends do not exceed 1,000.	3 M2 Topic B: Rounding to the Nearest Ten and Hundred 3 M2 Topic D: Two- and Three-Digit Measurement Addition and Subtraction

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.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 $1{,}000$.	3 M2 Lesson 12: Estimate sums and differences by rounding. 3 M2 Lesson 14: Use place value understanding to add and subtract like units. 3 M2 Lesson 15: Use the associative property to make the next ten to add. 3 M2 Lesson 16: Use compensation to add. 3 M2 Lesson 17: Use place value understanding to subtract efficiently using take from a ten. 3 M2 Lesson 18: Use place value understanding to subtract efficiently using take from a hundred. 3 M2 Lesson 19: Use compensation to subtract. 3 M2 Lesson 20: Add measurements using the standard algorithm to compose larger units once. 3 M2 Lesson 21: Add measurements using the standard algorithm to compose larger units twice. 3 M2 Lesson 22: Subtract measurements using the standard algorithm to decompose larger units once. 3 M2 Lesson 23: Subtract measurements using the standard algorithm to decompose larger units twice. 3 M2 Lesson 24: Subtract measurements using the standard algorithm to decompose larger units across two place values. 3 M6 Lesson 26: Fluently multiply and divide within 100 and add and subtract within $1{,}000$.
3.CE.1.d Identify and use the appropriate symbol to distinguish between expressions that are equal and expressions that are not equal (e.g., $256 - 13 = 220 + 23$; $457 + 100 \neq 557 + 100$).	*Supplemental material is necessary to address this standard.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.CE.1.e 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.	3 M2 Lesson 12: Estimate sums and differences by rounding. 3 M2 Lesson 14: Use place value understanding to add and subtract like units. 3 M2 Lesson 15: Use the associative property to make the next ten to add. 3 M2 Lesson 16: Use compensation to add. 3 M2 Lesson 17: Use place value understanding to subtract efficiently using take from a ten. 3 M2 Lesson 18: Use place value understanding to subtract efficiently using take from a hundred. 3 M2 Lesson 19: Use compensation to subtract. 3 M2 Lesson 20: Add measurements using the standard algorithm to compose larger units once. 3 M2 Lesson 21: Add measurements using the standard algorithm to compose larger units twice. 3 M2 Lesson 22: Subtract measurements using the standard algorithm to decompose larger units once. 3 M2 Lesson 23: Subtract measurements using the standard algorithm to decompose larger units twice. 3 M2 Lesson 24: Subtract measurements using the standard algorithm to decompose larger units across two place values.

Computation and Estimation

3.CE.2 The student will recall with automaticity multiplication and division facts through 10×10; and represent, solve, and justify solutions to single-step contextual problems using multiplication and division with whole numbers.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.CE.2.a Represent multiplication and division of whole numbers through 10×10, including in a contextual situation, using a variety of approaches and models (e.g., repeated addition/subtraction, equal-sized groups/sharing, arrays, equal jumps on a number line, using multiples to skip count).	3 M1 Lesson 2: Interpret equal groups as multiplication. 3 M1 Lesson 3: Relate multiplication to the array model. 3 M1 Lesson 4: Interpret the meaning of factors as number of groups or number in each group. 3 M1 Topic B: Conceptual Understanding of Division 3 M1 Lesson 10: Demonstrate the commutative property of multiplication using a unit of 2 and the array model. 3 M1 Lesson 11: Demonstrate the commutative property of multiplication using a unit of 4 and the array model. 3 M1 Lesson 13: Demonstrate the commutative property of multiplication using a unit of 3 and the array model. 3 M1 Topic D: Two Interpretations of Division 3 M3 Lesson 15: Reason about and explain patterns of multiplication and division with units of 1 and 0. 3 M3 Lesson 18: Create multiplication and division word problems.
3.CE.2.b Use inverse relationships to write the related facts connected to a given model for multiplication and division of whole numbers through 10×10.	3 M1 Lesson 15: Model division as an unknown factor problem. 3 M1 Lesson 16: Model the quotient as the number of groups using units of 2, 3, 4, 5, and 10. 3 M1 Lesson 17: Model the quotient as the size of each group using units of 2, 3, 4, 5, and 10. 3 M1 Lesson 20: Use the distributive property to break apart division problems into known facts. 3 M3 Lesson 2: Count by units of 6 to multiply and divide by using arrays. 3 M3 Lesson 7: Count by units of 7 to multiply and divide by using arrays and tape diagrams.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.CE.2.c Apply strategies (e.g., place value, the properties of multiplication and/or addition) when multiplying and dividing whole numbers.	3 M1 Topic C: Properties of Multiplication 3 M1 Lesson 19: Use the distributive property to break apart multiplication problems into known facts. 3 M3 Lesson 1: Organize, count, and represent a collection of objects. 3 M3 Lesson 3: Count by units of 8 to multiply and divide by using arrays. 3 M3 Lesson 4: Decompose pictorial arrays to create expressions with three factors. 3 M3 Lesson 5: Use the break apart and distribute strategy to multiply with units of 6 and 8. 3 M3 Lesson 6: Use the break apart and distribute strategy to divide with units of 6 and 8. 3 M3 Lesson 8: Use the break apart and distribute strategy to multiply with units of 7. 3 M3 Lesson 9: Model the associative property as a strategy to multiply. 3 M3 Lesson 10: Use parentheses in expressions with different operations. 3 M3 Lesson 11: Use the break apart and distribute strategy to divide with units of 7. 3 M3 Lesson 13: Count by units of 9 to multiply. 3 M3 Lesson 14: Apply strategies and identify patterns to multiply with units of 9. 3 M3 Lesson 23: Identify patterns and apply strategies to multiply with units of 11 and 12. 3 M3 Lesson 24: Organize, count, and represent a collection of objects.
3.CE.2.d Demonstrate fluency with multiplication facts through 10×10 by applying reasoning strategies (e.g., doubling, add-a-group, subtract-a-group, near squares, and inverse relationships).	3 M1 Lesson 12: Demonstrate the distributive property using a unit of 4. 3 M1 Lesson 14: Demonstrate the distributive property using units of 2, 3, 4, 5, and 10. 3 M1 Topic E: Application of Multiplication and Division Concepts 3 M3 Lesson 1: Organize, count, and represent a collection of objects. 3 M3 Lesson 14: Apply strategies and identify patterns to multiply with units of 9. 3 M3 Lesson 17: Identify and complete patterns with input–output tables. 3 M3 Lesson 24: Organize, count, and represent a collection of objects. 3 M6 Lesson 26: Fluently multiply and divide within 100 and add and subtract within 1,000.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.CE.2.e Represent, solve, and justify solutions to single-step contextual problems that involve multiplication and division of whole numbers through 10×10.	3 M1 Lesson 5: Represent and solve multiplication word problems by using drawings and equations. 3 M1 Lesson 8: Model measurement and partitive division by drawing arrays. 3 M1 Lesson 9: Represent and solve division word problems using drawings and equations. 3 M1 Lesson 16: Model the quotient as the number of groups using units of 2, 3, 4, 5, and 10. 3 M1 Lesson 17: Model the quotient as the size of each group using units of 2, 3, 4, 5, and 10. 3 M1 Lesson 18: Represent and solve measurement and partitive division word problems. 3 M1 Lesson 22: Represent and solve two-step word problems using the properties of multiplication. 3 M1 Lesson 23: Represent and solve two-step word problems using drawings and equations. 3 M3 Lesson 2: Count by units of 6 to multiply and divide by using arrays. 3 M3 Lesson 7: Count by units of 7 to multiply and divide by using arrays and tape diagrams. 3 M3 Lesson 8: Use the break apart and distribute strategy to multiply with units of 7. 3 M3 Lesson 12: Solve one-step word problems involving multiplication and division. 3 M3 Lesson 25: Apply multiplication and division concepts to complete a multi-part task.
3.CE.2.f Recall with automaticity the multiplication facts through 10×10 and the corresponding division facts.	3 M1 Lesson 12: Demonstrate the distributive property using a unit of 4. 3 M1 Lesson 14: Demonstrate the distributive property using units of 2, 3, 4, 5, and 10. 3 M1 Topic E: Application of Multiplication and Division Concepts 3 M3 Lesson 1: Organize, count, and represent a collection of objects. 3 M3 Lesson 14: Apply strategies and identify patterns to multiply with units of 9. 3 M3 Lesson 17: Identify and complete patterns with input–output tables. 3 M3 Lesson 24: Organize, count, and represent a collection of objects. 3 M6 Lesson 26: Fluently multiply and divide within 100 and add and subtract within 1,000.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.CE.2.g Create an equation to represent the mathematical relationship between equivalent expressions using multiplication and/or division facts through 10×10 (e.g., $4 \times 3 = 14 - 2$, $35 \div 5 = 1 \times 7$).	*Supplemental material is necessary to address this standard.*

Measurement and Geometry

3.MG.1 The student will reason mathematically using standard units (U.S. Customary and metric) with appropriate tools to estimate and measure objects by length, weight/mass, and liquid volume to the nearest half or whole unit.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.MG.1.a Justify whether an estimate or an exact measurement is needed for a contextual situation and choose an appropriate unit.	*Supplemental material is necessary to address this standard.*
3.MG.1.b Estimate and measure:	*This standard is fully addressed by the lessons aligned to its subsections.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.MG.1.b.i length of an object to the nearest U.S. Customary unit ($\frac{1}{2}$ inch, inch, foot, yard) and metric unit (centimeter, meter);	2 M1 Lesson 5: Connect measurement to physical units by iterating a centimeter cube. 2 M1 Lesson 6: Make a 10 cm ruler and measure objects. 2 M1 Lesson 7: Measure lengths and relate 10 cm and 1 cm. 2 M1 Lesson 8: Make a meter stick and measure with various tools. 2 M1 Lesson 13: Estimate and measure height to model metric relationships. 2 M5 Lesson 8: Iterate an inch tile to create a unit ruler and measure to the nearest inch. 2 M5 Lesson 9: Use an inch ruler and a yard stick to estimate and measure the length of various objects. 3 M5 Lesson 15: Identify fractions on a ruler as numbers on a number line. 3 M5 Lesson 16: Measure lengths and record data on a line plot.
3.MG.1.b.ii weight/mass of an object to the nearest U.S. Customary unit (pound) and metric unit (kilogram); and	3 M2 Lesson 1: Connect the composition of 1 kilogram to the composition of 1 thousand. 3 M2 Lesson 2: Estimate the weight of familiar objects and read scales when weighing objects.
3.MG.1.b.iii liquid volume to the nearest U.S. Customary unit (cup, pint, quart, gallon) and metric unit (liter).	3 M2 Lesson 4: Connect decomposition of 1 liter to the decomposition of 1 thousand. 3 M2 Lesson 5: Estimate and measure liquid volume using a vertical number line and connect composition of 1 liter to composition of 1 thousand.
3.MG.1.c Compare estimates of length, weight/mass, or liquid volume with the actual measurements.	2 M1 Lesson 13: Estimate and measure height to model metric relationships. 3 M2 Lesson 2: Estimate the weight of familiar objects and read scales when weighing objects. 3 M2 Lesson 5: Estimate and measure liquid volume using a vertical number line and connect composition of 1 liter to composition of 1 thousand.

Measurement and Geometry

3.MG.2 The student will use multiple representations to estimate and solve problems, including those in context, involving area and perimeter (in both U.S. Customary and metric units).

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.MG.2.a Solve problems, including those in context, involving area:	*This standard is fully addressed by the lessons aligned to its subsections.*
3.MG.2.a.i describe and give examples of area as a measurement in contextual situations; and	3 M4 Topic A: Foundations for Understanding Area 3 M4 Lesson 16: Solve historical math problems involving area.
3.MG.2.a.ii estimate and determine the area of a given surface by counting the number of square units, describe the measurement (using the number and unit) and justify the measurement.	3 M4 Lesson 2: Recognize area as an attribute of polygons. 3 M4 Lesson 3: Tile polygons to find their areas. 3 M4 Lesson 4: Compose rectangles to compare areas. 3 M4 Lesson 5: Relate side lengths to the number of tiles on a side. 3 M4 Lesson 6: Tile rectangles with squares to make arrays and relate the side lengths to the area. 3 M4 Lesson 7: Draw rows and columns to complete a rectangular array and determine its area. 3 M4 Lesson 8: Determine the area of a rectangle by using side lengths. 3 M4 Lesson 9: Multiply side lengths to find the area of a rectangle. 3 M4 Lesson 16: Solve historical math problems involving area. 3 M4 Lesson 18: Find the area of shapes and represent area data on a line plot.
3.MG.2.b Solve problems, including those in context, involving perimeter:	*This standard is fully addressed by the lessons aligned to its subsections.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.MG.2.b.i describe and give examples of perimeter as a measurement in contextual situations;	3 M6 Lesson 13: Decompose quadrilaterals to understand perimeter as the boundary of a shape.
3.MG.2.b.ii estimate and measure the distance around a polygon (with no more than six sides) to determine the perimeter and justify the measurement; and	3 M6 Lesson 13: Decompose quadrilaterals to understand perimeter as the boundary of a shape. 3 M6 Lesson 14: Measure side lengths in whole-number units to determine the perimeters of polygons.
3.MG.2.b.iii given the lengths of all sides of a polygon (with no more than six sides), determine its perimeter and justify the measurement.	3 M6 Lesson 15: Recognize perimeter as an attribute of shapes and solve problems with unknown measurements.

Measurement and Geometry

3.MG.3 The student will demonstrate an understanding of the concept of time to the nearest minute and solve single-step contextual problems involving elapsed time in one-hour increments within a 12-hour period.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.MG.3.a Tell and write time to the nearest minute, using analog and digital clocks.	3 M6 Lesson 1: Relate skip-counting by fives on the clock to telling time on the number line. 3 M6 Lesson 2: Count by fives and ones on the number line as a strategy for telling time to the nearest minute on the clock.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.MG.3.b Match a written time (e.g., 4:38, 7:09, 12:51) to the time shown on analog and digital clocks to the nearest minute.	3 M6 Lesson 1: Relate skip-counting by fives on the clock to telling time on the number line. 3 M6 Lesson 2: Count by fives and ones on the number line as a strategy for telling time to the nearest minute on the clock.
3.MG.3.c Solve single-step contextual problems involving elapsed time in one-hour increments, within a 12-hour period (within a.m. or within p.m.) when given:	*This standard is addressed by the lessons aligned to its subsections.*
3.MG.3.c.i the starting time and the ending time, determine the amount of time that has elapsed;	*Supplemental material is necessary to address this standard.*
3.MG.3.c.ii the starting time and amount of elapsed time in one-hour increments, determine the ending time; or	*Supplemental material is necessary to address this standard.*
3.MG.3.c.iii the ending time and the amount of elapsed time in one-hour increments, determine the starting time.	*Supplemental material is necessary to address this standard.*

Measurement and Geometry

3.MG.4 The student will identify, describe, classify, compare, combine, and subdivide polygons.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.MG.4.a Describe a polygon as a closed plane figure composed of at least three line segments that do not cross.	2 M3 Lesson 1: Determine the defining attributes of a polygon.
3.MG.4.b Classify figures as polygons or not polygons and justify reasoning.	2 M3 Lesson 1: Determine the defining attributes of a polygon.
3.MG.4.c Identify and describe triangles, quadrilaterals, pentagons, hexagons, and octagons in various orientations, with and without contexts.	2 M3 Lesson 2: Use attributes to identify, build, and describe two-dimensional shapes. 2 M3 Lesson 3: Identify, build, and describe right angles and parallel lines. 2 M3 Lesson 4: Use attributes to identify, classify, and compose different quadrilaterals. 2 M3 Lesson 6: Recognize that a whole polygon can be decomposed into smaller parts and the parts can be composed to make a whole. 2 M3 Lesson 7: Combine shapes to create a composite shape and create a new shape from composite shapes.
3.MG.4.d Identify and name examples of polygons (triangles, quadrilaterals, pentagons, hexagons, octagons) in the environment.	*Supplemental material is necessary to address this standard.*
3.MG.4.e Classify and compare polygons (triangles, quadrilaterals, pentagons, hexagons, octagons).	2 M3 Lesson 3: Identify, build, and describe right angles and parallel lines. 2 M3 Lesson 4: Use attributes to identify, classify, and compose different quadrilaterals.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.MG.4.f Combine no more than three polygons, where each has three or four sides, and name the resulting polygon (triangles, quadrilaterals, pentagons, hexagons, octagons).	2 M3 Lesson 7: Combine shapes to create a composite shape and create a new shape from composite shapes.
3.MG.4.g Subdivide a three-sided or four-sided polygon into no more than three parts and name the resulting polygons.	2 M3 Lesson 6: Recognize that a whole polygon can be decomposed into smaller parts and the parts can be composed to make a whole.

Probability and Statistics

3.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 pictographs and bar graphs.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.PS.1.a Formulate questions that require the collection or acquisition of data.	*Supplemental material is necessary to address this standard.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.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 for no more than eight categories) using various methods (e.g., polls, observations, tallies).	*Supplemental material is necessary to address this standard.*
3.PS.1.c Organize and represent a data set using pictographs that include an appropriate title, labeled axes, and key. Each pictograph symbol should represent 1, 2, 5 or 10 data points.	3 M6 Lesson 22: Generate categorical data and represent it by using a scaled picture graph. 3 M6 Lesson 23: Solve problems by creating scaled picture graphs and scaled bar graphs.
3.PS.1.d Organize and represent a data set using bar graphs with a title and labeled axes, with and without the use of technology tools. Determine and use an appropriate scale (increments limited to multiples of 1, 2, 5 or 10).	3 M2 Lesson 13: Collect and represent data in a scaled bar graph and solve related problems. 3 M6 Lesson 23: Solve problems by creating scaled picture graphs and scaled bar graphs.
3.PS.1.e Analyze data represented in pictographs and bar graphs, and communicate results orally and in writing:	*This standard is fully addressed by the lessons aligned to its subsections.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.PS.1.e.i describe the categories of data and the data as a whole (e.g., data were collected on preferred ways to cook or prepare eggs—scrambled, fried, hard boiled, and egg salad);	3 M2 Lesson 13: Collect and represent data in a scaled bar graph and solve related problems. 3 M6 Lesson 22: Generate categorical data and represent it by using a scaled picture graph. 3 M6 Lesson 23: Solve problems by creating scaled picture graphs and scaled bar graphs.
3.PS.1.e.ii identify parts of the data that have special characteristics, including categories with the greatest, the least, or the same (e.g., most students prefer scrambled eggs);	3 M2 Lesson 13: Collect and represent data in a scaled bar graph and solve related problems. 3 M6 Lesson 22: Generate categorical data and represent it by using a scaled picture graph. 3 M6 Lesson 23: Solve problems by creating scaled picture graphs and scaled bar graphs.
3.PS.1.e.iii make inferences about data represented in pictographs and bar graphs;	3 M2 Lesson 13: Collect and represent data in a scaled bar graph and solve related problems. 3 M6 Lesson 22: Generate categorical data and represent it by using a scaled picture graph. 3 M6 Lesson 23: Solve problems by creating scaled picture graphs and scaled bar graphs.
3.PS.1.e.iv use characteristics of the data to draw conclusions about the data and make predictions based on the data (e.g., it is unlikely that a third grader would like hard boiled eggs); and	3 M2 Lesson 13: Collect and represent data in a scaled bar graph and solve related problems. 3 M6 Lesson 22: Generate categorical data and represent it by using a scaled picture graph. 3 M6 Lesson 23: Solve problems by creating scaled picture graphs and scaled bar graphs.
3.PS.1.e.v solve one- and two-step addition and subtraction problems using data from pictographs and bar graphs.	3 M2 Lesson 13: Collect and represent data in a scaled bar graph and solve related problems. 3 M6 Lesson 22: Generate categorical data and represent it by using a scaled picture graph. 3 M6 Lesson 23: Solve problems by creating scaled picture graphs and scaled bar graphs.

Patterns, Functions, and Algebra

3.PFA.1 The student will identify, describe, extend, and create increasing and decreasing patterns (limited to addition and subtraction of whole numbers), including those in context, using various representations.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
3.PFA.1.a Identify and describe increasing and decreasing patterns using various representations (e.g., objects, pictures, numbers, number lines).	*Supplemental material is necessary to address this standard.*
3.PFA.1.b Analyze an increasing or decreasing pattern and generalize the change to extend the pattern or identify missing terms using various representations.	*Supplemental material is necessary to address this standard.*
3.PFA.1.c Solve contextual problems that involve identifying, describing, and extending patterns.	*Supplemental material is necessary to address this standard.*
3.PFA.1.d Create increasing and decreasing patterns using objects, pictures, numbers, and number lines.	*Supplemental material is necessary to address this standard.*
3.PFA.1.e Investigate and explain the connection between two different representations of the same increasing or decreasing pattern.	*Supplemental material is necessary to address this standard.*