EUREKA MATH².

Grade 4 | Maine Mathematics Standards Correlation to Eureka Math^{2®}

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 Math*^{2®}, 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 Math*² 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* and moments that have been delighting students and teachers for years, it also boasts these exciting new features:

Teachability

*Eureka Math*² employs streamlined materials that allow teachers to plan more efficiently and focus their energy on delivering highquality 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 Math*² 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 Math*² 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 Math*² 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.

Standards for Mathematical Practice	Aligned Components of <i>Eureka Math</i> ²
1.	Lessons in every module engage students in mathematical practices.
Make sense of problems and persevere in solving them.	These are indicated in margin notes included with every lesson.
2.	Lessons in every module engage students in mathematical practices.
Reason abstractly and quantitatively.	These are indicated in margin notes included with every lesson.
3.	Lessons in every module engage students in mathematical practices.
Construct viable arguments and critique the reasoning of others.	These are indicated in margin notes included with every lesson.
4.	Lessons in every module engage students in mathematical practices.
Model with mathematics.	These are indicated in margin notes included with every lesson.
5.	Lessons in every module engage students in mathematical practices.
Use appropriate tools strategically.	These are indicated in margin notes included with every lesson.
6.	Lessons in every module engage students in mathematical practices.
Attend to precision.	These are indicated in margin notes included with every lesson.
7.	Lessons in every module engage students in mathematical practices.
Look for and make use of structure.	These are indicated in margin notes included with every lesson.
8.	Lessons in every module engage students in mathematical practices.
Look for and express regularity in repeated reasoning.	These are indicated in margin notes included with every lesson.

Quantitative Reasoning–Numbers and Operations in Base Ten

QR.C.7 Use place value understanding and properties of operations to perform multi-digit arithmetic with whole numbers and decimals to hundredths.

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
QR.C.7.4.NBT.B.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.	4 M1 Topic D: Multi-Digit Whole Number Addition and Subtraction
QR.C.7.4.NBT.B.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	 4 M2 Lesson 1: Multiply multiples of 10 by one-digit numbers by using the associative property of multiplication. 4 M3 Lesson 2: Multiply by multiples of 100 and 1,000. 4 M3 Lesson 3: Multiply a two-digit multiple of 10 by a two-digit multiple of 10. 4 M2 Topic B: Multiplication of Tens and Ones by One-Digit Numbers 4 M3 Topic C: Multiplication of up to Four-Digit Numbers by One-Digit Numbers 4 M3 Topic D: Multiplication of Two-Digit Numbers by Two-Digit Numbers
QR.C.7.4.NBT.B.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	 4 M2 Lesson 2: Divide two- and three-digit multiples of 10 by one-digit numbers. 4 M2 Topic C: Division of Tens and Ones by One-Digit Numbers 4 M3 Lesson 1: Divide multiples of 100 and 1,000. 4 M3 Topic B: Division of Thousands, Hundreds, Tens, and Ones 4 M3 Lesson 21: Find whole-number quotients and remainders. 4 M3 Lesson 22: Represent, estimate, and solve division word problems.

Quantitative Reasoning–Numbers and Operations in Base Ten

QR.C.8 Understand the place value system.

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
QR.C.8.4.NBT.A.1 Recognize that in a multi-digit whole number, a digit in any place represents ten times what it represents in the place to its right.	4 M1 Lesson 6: Demonstrate that a digit represents 10 times the value of what it represents in the place to its right.
QR.C.8.4.NBT.A.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	 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 9: Compare numbers within 1,000,000 by using >, =, and <. 4 M1 Lesson 10: Name numbers by using place value understanding. 4 M1 Lesson 11: Find 1, 10, and 100 thousand more than and less than a given number.
QR.C.8.4.NBT.A.3 Use place value understanding to round multi-digit whole numbers to any place.	 4 M1 Lesson 12: Round to the nearest thousand. 4 M1 Lesson 13: Round to the nearest ten thousand and hundred thousand. 4 M1 Lesson 14: Round multi-digit numbers to any place. 4 M1 Lesson 15: Apply estimation to real-world situations by using rounding.

QR.C.9 Develop and extend the understanding of fractions as numbers, including equivalence and ordering.

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
QR.C.9.4.NF.A.1	4 M4 Lesson 8: Generate equivalent fractions with smaller units for unit fractions.
Explain why a fraction $\frac{a}{b}$ is equivalent to a fraction $\frac{n \times a}{n \times b}$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions, including fractions greater than 1.	 4 M4 Lesson 9: Generate equivalent fractions with smaller units for non-unit fractions. 4 M4 Lesson 10: Generate equivalent fractions with larger units. 4 M4 Lesson 11: Represent equivalent fractions by using tape diagrams, number lines, and multiplication or division. 4 M4 Lesson 12: Generate equivalent fractions for fractions greater than 1 and generate equivalent mixed numbers.
QR.C.9.4.NF.A.2	4 M4 Topic C: Compare Fractions
Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.	

QR.C.10 Understand decimal notation for fractions, and compare decimal fractions.

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
QR.C.10.4.NF.C.5	4 M5 Topic B: Tenths and Hundredths
Express a fraction with denominator 10 as an equivalent fraction with denominator 100 and use this technique to add two fractions with respective denominators 10 and 100.	4 M5 Topic D: Addition of Tenths and Hundredths
QR.C.10.4.NF.C.6	4 M5 Topic A: Exploration of Tenths
Use decimal notation for fractions with denominators 10 or 100.	4 M5 Topic B: Tenths and Hundredths
QR.C.10.4.NF.C.7	4 M5 Topic C: Comparison of Decimal Numbers
Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model.	

QR.C.11 Use equivalent fractions as a strategy to add and subtract fractions.

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
QR.C.11.4.NF.B.3 Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$.	This standard is fully addressed by the lessons aligned to its subsections.
QR.C.11.4.NF.B.3a Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.	 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
QR.C.11.4.NF.B.3b Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model to build fractions from unit fractions.	 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
QR.C.11.4.NF.B.3c Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.	 4 M4 Lesson 23: Add a fraction to a mixed number. 4 M4 Lesson 24: Add a mixed number to a mixed number. 4 M4 Lesson 25: Subtract a fraction from a mixed number, part 1. 4 M4 Lesson 26: Subtract a fraction from a mixed number, part 2. 4 M4 Lesson 27: Subtract a mixed number from a mixed number.

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
QR.C.11.4.NF.B.3d	4 M4 Lesson 18: Estimate sums and differences of fractions by using benchmarks.
Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.	4 M4 Lesson 20: Subtract a fraction from a whole number.
	4 M4 Lesson 21: Solve addition and subtraction word problems and estimate the reasonableness of the answers.
	4 M4 Lesson 24: Add a mixed number to a mixed number.
	4 M4 Lesson 27: Subtract a mixed number from a mixed number.
	4 M4 Lesson 28: Represent and solve word problems with mixed numbers by using drawings and equations.

QR.C.12 Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
QR.C.12.4.NF.B.4	This standard is fully addressed by the lessons aligned to its subsections.
Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.	
QR.C.12.4.NF.B.4a Understand a fraction $\frac{a}{b}$ as a multiple of $\frac{1}{b}$.	4 M4 Lesson 31: Decompose non-unit fractions into a product of a whole number and a unit fraction.
QR.C.12.4.NF.B.4b Understand a multiple of $\frac{a}{b}$ as a multiple of $\frac{1}{b}$ and use this understanding to multiply a fraction by a whole number.	 4 M4 Lesson 32: Multiply a fraction by a whole number by using the associative property. 4 M4 Lesson 33: Solve word problems involving multiplication of a fraction by a whole number. 4 M4 Lesson 34: Multiply a mixed number by a whole number by using the distributive property.

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
QR.C.12.4.NF.B.4c	4 M4 Lesson 33: Solve word problems involving multiplication of a fraction by a whole number.
Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.	

Algebraic Reasoning–Operations and Algebraic Thinking

AR.C.5 Solve problems involving the four operations.

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
AR.C.5.4.OA.A.1	4 M1 Topic A: Multiplication as Multiplicative Comparison
Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.	4 M1 Lesson 6: Demonstrate that a digit represents 10 times the value of what it represents in the place to its right.
AR.C.5.4.OA.A.2	4 M1 Topic A: Multiplication as Multiplicative Comparison
Multiply or divide to solve word problems	4 M2 Lesson 9: Solve multiplication word problems.
involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.	4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons.

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
AR.C.5.4.OA.A.3	4 M1 Lesson 15: Apply estimation to real-world situations by using rounding.
Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	 4 M1 Lesson 16: Add by using the standard algorithm. 4 M1 Lesson 17: Solve multi-step addition word problems by using the standard algorithm. 4 M1 Lesson 21: Solve two-step word problems by using addition and subtraction. 4 M1 Lesson 22: Solve multi-step word problems by using addition and subtraction. 4 M3 Topic F: Remainders, Estimating, and Problem Solving

Algebraic Reasoning—Operations and Algebraic Thinking AR.C.6 Gain familiarity with factors and multiples.

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
AR.C.6.4.OA.B.4	4 M2 Lesson 21: Find factor pairs for numbers up to 100 and use factors to identify numbers as prime or composite
Find all factor pairs for a whole number in the range 1–100. Recognize that a	4 M2 Lesson 22: Use division and the associative property of multiplication to find factors
whole number is a multiple of each of its	4 M2 Lesson 23: Determine whether a whole number is a multiple of another number.
number in the range $1-100$ is a multiple	4 M2 Lesson 24: Recognize that a number is a multiple of each of its factors.
of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.	4 M2 Lesson 25: Explore properties of prime and composite numbers up to 100 by using multiples.

Algebraic Reasoning–Operations and Algebraic Thinking

AR.C.8 Identify, explain, generate and analyze patterns.

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
AR.C.8.4.OA.C.5	4 M2 Lesson 26: Use relationships within a pattern to find an unknown term in the sequence.
Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.	

Geometric Reasoning–Geometry

GR.C.3 Draw and identify lines and angles and classify shapes by properties of their lines and angles.

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
GR.C.3.4.G.A.1	4 M6 Topic A: Lines and Angles
Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	4 M6 Lesson 10: Use 180° protractors to measure angles.
	4 M6 Lesson 11: Estimate and measure angles with a 180° protractor.
	4 M6 Lesson 12: Use a protractor to draw angles up to 180° .
	4 M6 Lesson 18: Analyze and classify triangles based on side length, angle measures, or both.
	4 M6 Lesson 19: Construct and classify triangles based on given attributes.
	4 M6 Lesson 20: Sort polygons based on a given rule.
GR.C.3.4.G.A.2	4 M6 Lesson 18: Analyze and classify triangles based on side length, angle measures, or both.
Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category and identify right triangles.	4 M6 Lesson 19: Construct and classify triangles based on given attributes.
	4 M6 Lesson 20: Sort polygons based on a given rule.

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
GR.C.3.4.G.A.3	4 M6 Lesson 17: Recognize, identify, and draw lines of symmetry.
Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	

Statistical Reasoning-Measurement & Data

SR.C.5 Solve problems involving measurement, conversion of measurement and estimation of intervals of time, liquid volumes, and masses of objects.

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
SR.C.5.4.MD.A.1	4 M1 Topic E: Metric Measurement Conversion Tables
Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.	4 M2 Lesson 17: Express measurements of length in terms of smaller units. 4 M3 Topic E: Problem Solving with Measurement

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
SR.C.5.4.MD.A.2	4 M2 Lesson 17: Express measurements of length in terms of smaller units.
Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	 4 M2 Lesson 10: Express measurements or length in terms of sindler units. 4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons. 4 M3 Topic E: Problem Solving with Measurement 4 M4 Lesson 18: Estimate sums and differences of fractions by using benchmarks. 4 M4 Lesson 20: Subtract a fraction from a whole number. 4 M4 Lesson 21: Solve addition and subtraction word problems and estimate the reasonableness of the answers. 4 M4 Lesson 24: Add a mixed number to a mixed number. 4 M4 Lesson 27: Subtract a mixed number from a mixed number. 4 M4 Lesson 28: Represent and solve word problems with mixed numbers by using drawings and equations. 4 M4 Lesson 33: Solve word problems involving multiplication of a fraction by a whole number. 4 M5 Lesson 14: Solve word problems with tenths and hundredths.

Statistical Reasoning-Measurement & Data

SR.C.6 Represent and interpret data.

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
SR.C.6.4.MD.B.4	4 M4 Lesson 29: Solve problems by using data from a line plot.
Make a line plot to display a data set of measurements in fractions of a unit $\left(\frac{1}{2}, \frac{1}{4}, \frac{1}{8}\right)$. Solve problems involving addition and subtraction of fractions by using information presented in line plots.	4 M4 Lesson 30: Represent data on a line plot.

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Statistical Reasoning-Measurement & Data

SR.C.7 Understand concepts of geometric measurement involving perimeter, area, and volume.

Aligned Components of Eureka Math ²
4 M2 Lesson 3: Investigate and use a formula for the area of a rectangle.
4 M2 Lesson 7: Multiply by using an area model and the distributive property.
4 M2 Lesson 18: Investigate and use formulas for the perimeter of a rectangle.
4 M2 Lesson 19: Apply area and perimeter formulas to solve problems.
4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons.

Statistical Reasoning-Measurement & Data

SR.C.8 Geometric measurement: understand concept of angle and measure angles.

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
SR.C.8.4.MD.C.5	This standard is fully addressed by the lessons aligned to its subsections.
Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:	
SR.C.8.4.MD.C.5a	4 M6 Lesson 7: Explore angles as fractional turns through a circle.
An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a "one-degree angle," and can be used to measure angles.	 4 M6 Lesson 8: Use a circular protractor to recognize a 1° angle as a turn through ¹/₃₆₀ of a circle. 4 M6 Lesson 9: Identify and measure angles as turns and recognize them in various contexts. 4 M6 Lesson 10: Use 180° protractors to measure angles. 4 M6 Lesson 11: Estimate and measure angles with a 180° protractor.

Maine Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
SR.C.8.4.MD.C.5b	4 M6 Lesson 7: Explore angles as fractional turns through a circle.
An angle that turns through <i>n</i> one-degree angles is said to have an angle measure of <i>n</i> degrees.	 4 M6 Lesson 8: Use a circular protractor to recognize a 1° angle as a turn through ¹/₃₆₀ of a circle. 4 M6 Lesson 9: Identify and measure angles as turns and recognize them in various contexts. 4 M6 Lesson 10: Use 180° protractors to measure angles.
	4 M6 Lesson 11: Estimate and measure angles with a 180° protractor.
SR.C.8.4.MD.C.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	 4 M6 Lesson 8: Use a circular protractor to recognize a 1° angle as a turn through ¹/₃₆₀ of a circle. 4 M6 Lesson 10: Use 180° protractors to measure angles. 4 M6 Lesson 11: Estimate and measure angles with a 180° protractor. 4 M6 Lesson 12: Use a protractor to draw angles up to 180°.
SR.C.8.4.MD.C.7	4 M6 Topic C: Determine Unknown Angle Measures
Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.	