EUREKA MATH².

Grade 4 | Montana Content Standards for Mathematics 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.

Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
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4 | Montana Content Standards for Mathematics Correlation to Eureka Math²

Operations and Algebraic Thinking

Use the four operations with whole numbers to solve problems.

Montana Content Standards for Mathematics	Aligned Components of Eureka Math ²
4.OA.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.
4.OA.2	4 M1 Topic A: Multiplication as Multiplicative Comparison
Multiply or divide to solve 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 9: Solve multiplication word problems.
	4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons.

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

Operations and Algebraic Thinking

Gain familiarity with factors and multiples.

Montana Content Standards for Mathematics

4.0A.4

Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.

Aligned Components of Eureka Math²

4 M2 Lesson 21: Find factor pairs for numbers up to 100 and use factors to identify numbers as prime or composite.

4 M2 Lesson 22: Use division and the associative property of multiplication to find factors.

4 M2 Lesson 23: Determine whether a whole number is a multiple of another number.

4 M2 Lesson 24: Recognize that a number is a multiple of each of its factors.

4 M2 Lesson 25: Explore properties of prime and composite numbers up to 100 by using multiples.

4 | Montana Content Standards for Mathematics Correlation to Eureka Math²

Operations and Algebraic Thinking

Generate and analyze patterns.

Montana Content Standards for Mathematics

Aligned Components of Eureka Math²

4.OA.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.	

Number and Operations in Base Ten

Generalize place value understanding for multi-digit whole numbers.

Montana Content Standards Aligned Components of Eureka Math² for Mathematics 4.NBT.1 4 M1 Lesson 6: Demonstrate that a digit represents 10 times the value of what it represents in the place to its right. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. 4 M1 Lesson 5: Organize, count, and represent a collection of objects. 4.NBT.2 Read and write multi-digit whole 4 M1 Lesson 7: Write numbers to 1,000,000 in unit form and expanded form by using numbers using base-ten numerals, place value structure. number names, and expanded form and 4 M1 Lesson 8: Write numbers to 1.000.000 in standard form and word form. compare two multi-digit numbers based 4 M1 Lesson 9: Compare numbers within 1,000,000 by using >, =, and <. on meanings of the digits in each place, using >, =, and < symbols to record the 4 M1 Lesson 10: Name numbers by using place value understanding. results of comparisons. 4 M1 Lesson 11: Find 1, 10, and 100 thousand more than and less than a given number.

Aligned Components of <i>Eureka Math</i> ²
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.

Montone Content Standarda

Number and Operations in Base Ten

Use place value understanding and properties of operations to perform multi-digit arithmetic.

Montana Content Standards for Mathematics	Aligned Components of <i>Eureka Math</i> ²
4.NBT.4	4 M1 Topic D: Multi-Digit Whole Number Addition and Subtraction
Fluently add and subtract multi-digit whole numbers using the standard algorithm.	
4.NBT.5	4 M2 Lesson 1: Multiply multiples of 10 by one-digit numbers by using the associative property
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.	of multiplication.
	4 M2 Topic B: Multiplication of Tens and Ones by One-Digit Numbers
	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 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

Montana Content Standards for Mathematics	Aligned Components of Eureka Math ²
4.NBT.6	4 M2 Lesson 2: Divide two- and three-digit multiples of 10 by one-digit numbers.
Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the 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 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.

Number and Operations-Fractions

Extend understanding of fraction equivalence and ordering.

Montana Content Standards for Mathematics	Aligned Components of Eureka Math ²
4.NF.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 and use this principle to recognize and generate equivalent fractions.	 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.

Montana Content Standards for Mathematics	Aligned Components of <i>Eureka Math</i> ²
4.NF.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.	

Number and Operations-Fractions

Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

Montana Content Standards for Mathematics	Aligned Components of <i>Eureka Math</i> ²
4.NF.3 Understand a fraction $\frac{a}{b}$ with $a > 1$ as a	This standard is fully addressed by the lessons aligned to its subsections.
sum of fractions $\frac{1}{b}$. 4.NF.3.a	4 M4 Topic A: Fraction Decomposition and Equivalence
Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.	4 M4 Lesson 7: Rename fractions as a sum of equivalent smaller unit fractions. 4 M4 Topic D: Add and Subtract Fractions

Montana Content Standards for Mathematics	Aligned Components of <i>Eureka Math</i> ²
4.NF.3.b	4 M4 Topic A: Fraction Decomposition and Equivalence
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.	4 M4 Lesson 7: Rename fractions as a sum of equivalent smaller unit fractions. 4 M4 Topic D: Add and Subtract Fractions
4.NF.3.c	4 M4 Lesson 23: Add a fraction to a mixed number.
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 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.
4.NF.3.d Solve word problems within cultural contexts, including those of Montana American Indians, 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 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. Supplemental material is necessary to address cultural contexts, including those of Montana American Indians.

Montana Content Standards for Mathematics	Aligned Components of <i>Eureka Math</i> ²
4.NF.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.	
4.NF.4.a 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.
4.NF.4.b	4 M4 Lesson 32: Multiply a fraction by a whole number by using the associative property.
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 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.
4.NF.4.c	4 M4 Lesson 33: Solve word problems involving multiplication of a fraction by a whole number.
Solve word problems within cultural contexts, including those of Montana American Indians, involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.	Supplemental material is necessary to address cultural contexts, including those of Montana American Indians.

4 | Montana Content Standards for Mathematics Correlation to Eureka Math²

Number and Operations-Fractions

Understand decimal notation for fractions, and compare decimal fractions.

Montana Content Standards for Mathematics	Aligned Components of Eureka Math ²
4.NF.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
4.NF.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
4.NF.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.	

4 | Montana Content Standards for Mathematics Correlation to Eureka Math²

Measurement and Data

Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

Montana Content Standards Aligned Components of Eureka Math² for Mathematics 4 M1 Topic E: Metric Measurement Conversion Tables 4.MD.1 Know relative sizes of measurement 4 M2 Lesson 17: Express measurements of length in terms of smaller units. units within one system of units 4 M3 Topic E: Problem Solving with Measurement including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, and 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.MD.2 4 M2 Lesson 17: Express measurements of length in terms of smaller units. Use the four operations to solve word 4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons. problems within cultural contexts, 4 M3 Topic E: Problem Solving with Measurement including those of Montana American 4 M4 Lesson 18: Estimate sums and differences of fractions by using benchmarks. Indians, involving distances, intervals of time, liquid volumes, masses of objects, 4 M4 Lesson 20: Subtract a fraction from a whole number. and money, including problems 4 M4 Lesson 21: Solve addition and subtraction word problems and estimate the reasonableness involving simple fractions or decimals, of the answers. and problems that require expressing 4 M4 Lesson 24: Add a mixed number to a mixed number. measurements given in a larger unit in terms of a smaller unit. Represent 4 M4 Lesson 27: Subtract a mixed number from a mixed number. measurement quantities using diagrams 4 M4 Lesson 28: Represent and solve word problems with mixed numbers by using drawings such as number line diagrams that and equations. feature a measurement scale. 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. Supplemental material is necessary to address cultural contexts, including those of Montana American Indians.

Montana Content Standards for Mathematics	Aligned Components of <i>Eureka Math</i> ²
4.MD.3	4 M2 Lesson 3: Investigate and use a formula for the area of a rectangle.
Apply the area and perimeter formulas for rectangles in real-world and mathematical problems.	 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.

Montone Content Standard

Measurement and Data

Represent and interpret data.

Montana Content Standards for Mathematics	Aligned Components of <i>Eureka Math</i> ²
4.MD.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.

4 | Montana Content Standards for Mathematics Correlation to Eureka Math²

Measurement and Data

Geometric measurement: understand concepts of angle and measure angles.

Montana Content Standards for Mathematics	Aligned Components of <i>Eureka Math</i> ²
4.MD.5 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:	This standard is fully addressed by the lessons aligned to its subsections.
4.MD.5.a 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 7: Explore angles as fractional turns through a circle. 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.
4.MD.5.b 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 7: Explore angles as fractional turns through a circle. 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.
4.MD.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°.

Montana Content Standards for Mathematics	Aligned Components of <i>Eureka Math</i> ²
4.MD.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.	

Montana Content Standards

Geometry

Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

Montana Content Standards for Mathematics	Aligned Components of <i>Eureka Math</i> ²
4.G.1	4 M6 Topic A: Lines and Angles
Draw points, lines, line segments, rays,	4 M6 Lesson 10: Use 180° protractors to measure angles.
angles (right, acute, obtuse), and perpendicular and parallel lines. Identify	4 M6 Lesson 11: Estimate and measure angles with a 180° protractor.
these in two-dimensional figures.	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.

Montana Content Standards for Mathematics	Aligned Components of Eureka Math ²
4.G.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.
4.G.3	4 M6 Lesson 17: Recognize, identify, and draw lines of symmetry.
Recognize a line of symmetry for a two-dimensional figure, including those found in Montana American Indian designs, 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.	Supplemental material is necessary to address lines of symmetry found in Montana American Indian designs.