Grade 3 | North Dakota Mathematics K–12 Standards 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

Math Attributes	Aligned Components of *Eureka Math*
3–5.MA.P Learners can develop and carry out a logical plan to problem-solve situations, reflect on the reasonableness of solutions, and explore alternate strategies with guidance.	Lessons in every module engage students in math attributes. These are indicated in margin notes included with every lesson.
3–5.MA.C Learners can make connections and summarize related ideas using supporting evidence.	Lessons in every module engage students in math attributes. These are indicated in margin notes included with every lesson.
3–5.MA.R Learners can reason logically based on experience and knowledge, citing evidence to support their reasoning and conclusions.	Lessons in every module engage students in math attributes. These are indicated in margin notes included with every lesson.

Number and Operations: Learners will develop a foundational understanding of the number system, operations, and computational fluency to create connections and solve problems within and across concepts.

3.NO.CC Counting and Cardinality: Learners will understand the relationship between numerical symbols, names, quantities, and counting sequences.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
3.NO.CC.1 Read and write numbers up to 10,000 using objects or visual representations, including standard, word, and expanded forms.	*Supplemental material is necessary to address this standard.*

Number and Operations: Learners will develop a foundational understanding of the number system, operations, and computational fluency to create connections and solve problems within and across concepts.

3.NO.NBT Base Ten: Learners will understand the place value structure of the base-ten number system and represent, compare, and perform operations with multi-digit whole numbers and decimals.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
3.NO.NBT.1 Compare two four-digit numbers using symbols >, <, and =. Justify comparisons based on the value of thousands, hundreds, tens, and ones.	*Supplemental material is necessary to address this standard.*

<table>
<tr><th>North Dakota Mathematics
K–12 Standards</th><th>Aligned Components of *Eureka Math*</th></tr>
<tr>
<td>

3.NO.NBT.2

Apply place value understanding to round whole numbers to the nearest 10 or 100.

</td>
<td>

G3 M2 Topic C: Rounding to the Nearest Ten and Hundred

G3 M2 Lesson 17: Estimate sums by rounding and apply to solve measurement word problems.

G3 M2 Lesson 20: Estimate differences by rounding and apply to solve measurement word problems.

G3 M2 Lesson 21: Estimate sums and differences of measurements by rounding, and then solve mixed word problems.

G3 M7 Lesson 33: Solidify fluency with Grade 3 skills.

G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.

</td>
</tr>
<tr>
<td>

3.NO.NBT.3

Add and subtract within 1,000 using place value strategies, algorithms, and/or the relationship between addition and subtraction.

</td>
<td>

G3 M2 Lesson 4: Solve word problems involving time intervals within 1 hour by counting backward and forward using the number line and clock.

G3 M2 Lesson 5: Solve word problems involving time intervals within 1 hour by adding and subtracting on the number line.

G3 M2 Lesson 8: Solve one-step word problems involving metric weights within 100 and estimate to reason about solutions.

G3 M2 Lesson 11: Solve mixed word problems involving all four operations with grams, kilograms, liters, and milliliters given in the same units.

G3 M2 Topic D: Two- and Three-Digit Measurement Addition Using the Standard Algorithm

G3 M2 Topic E: Two- and Three-Digit Measurement Subtraction Using the Standard Algorithm

G3 M7 Lesson 33: Solidify fluency with Grade 3 skills.

G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.

</td>
</tr>
<tr>
<td>

3.NO.NBT.4

Multiply one-digit whole numbers by multiples of 10 within 100.

</td>
<td>

G3 M3 Topic F: Multiplication of Single-Digit Factors and Multiples of 10

</td>
</tr>
</table>

Number and Operations: Learners will develop a foundational understanding of the number system, operations, and computational fluency to create connections and solve problems within and across concepts.

3.NO.NF Fractions: Learners will understand fractions and equivalency to represent, compare, and perform operations of fractions and decimals.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
3.NO.NF.1 Partition two-dimensional figures into equal areas and express the area of each part as a unit fraction of the whole. Describe using the language of sixths, eighths, a sixth of, and an eighth of.	G3 M5 Topic A: Partitioning a Whole into Equal Parts G3 M7 Lesson 31: Explore and create unconventional representations of one-half. G3 M7 Lesson 32: Explore and create unconventional representations of one-half. G3 M7 Lesson 33: Solidify fluency with Grade 3 skills.
3.NO.NF.2 Represent and understand a fraction as a number on a number line.	G3 M5 Lesson 14: Place fractions on a number line with endpoints 0 and 1. G3 M5 Lesson 15: Place any fraction on a number line with endpoints 0 and 1. G3 M5 Lesson 18: Compare fractions and whole numbers on the number line by reasoning about their distance from 0. G3 M5 Lesson 30: Partition various wholes precisely into equal parts using a number line method.
3.NO.NF.3 Represent equivalent fractions using visual representations and number lines.	G3 M5 Topic E: Equivalent Fractions
3.NO.NF.4 Recognize whole numbers as fractions and express fractions that are equivalent to whole numbers.	G3 M5 Lesson 14: Place fractions on a number line with endpoints 0 and 1. G3 M5 Lesson 15: Place any fraction on a number line with endpoints 0 and 1. G3 M5 Lesson 16: Place whole number fractions and fractions between whole numbers on the number line. G3 M5 Lesson 17: Practice placing various fractions on the number line.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
3.NO.NF.4 *continued*	G3 M5 Lesson 21: Recognize and show that equivalent fractions refer to the same point on the number line.
	G3 M5 Lesson 23: Generate simple equivalent fractions by using visual fraction models and the number line.
	G3 M5 Lesson 24: Express whole numbers as fractions and recognize equivalence with different units.
	G3 M5 Lesson 25: Express whole number fractions on the number line when the unit interval is 1.
	G3 M5 Lesson 26: Decompose whole number fractions greater than 1 using whole number equivalence with various models.
	G3 M7 Lesson 33: Solidify fluency with Grade 3 skills.
3.NO.NF.5 Compare fractions of the same whole having the same numerators or denominators, using symbols $>$, $<$, and $=$ by reasoning about their size (fractions should be limited to denominators of 2, 3, 4, 6, and 8 and should not exceed the whole).	G3 M5 Lesson 10: Compare unit fractions by reasoning about their size using fraction strips.
	G3 M5 Lesson 11: Compare unit fractions with different-sized models representing the whole.
	G3 M5 Lesson 13: Identify a shaded fractional part in different ways depending on the designation of the whole.
	G3 M5 Lesson 18: Compare fractions and whole numbers on the number line by reasoning about their distance from 0.
	G3 M5 Lesson 19: Understand distance and position on the number line as strategies for comparing fractions.
	G3 M5 Lesson 28: Compare fractions with the same numerator pictorially.
	G3 M5 Lesson 29: Compare fractions with the same numerator using $<$, $>$, or $=$, and use a model to reason about their size.
	G3 M7 Lesson 33: Solidify fluency with Grade 3 skills.

Algebraic Reasoning: Learners will look for, generate, and make sense of patterns, relationships, and algebraic symbols to represent mathematical models while adopting approaches and solutions in novel situations.

3.AR.OA Operations and Algebraic Thinking: Learners will analyze patterns and relationships to generate and interpret numerical expressions.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
3.AR.OA.1 Using mental strategies, multiply and divide basic facts within 100. Automatically multiply and divide up to 5×5 and 10s facts.	G3 M1 Lesson 14: Skip-count objects in models to build fluency with multiplication facts using units of 4. G3 M1 Lesson 17: Model the relationship between multiplication and division. G3 M3 Topic A: The Properties of Multiplication and Division G3 M3 Topic B: Multiplication and Division Using Units of 6 and 7 G3 M3 Lesson 12: Apply the distributive property and the fact $9 = 10 - 1$ as a strategy to multiply. G3 M3 Lesson 13: Identify and use arithmetic patterns to multiply. G3 M3 Lesson 14: Identify and use arithmetic patterns to multiply. G3 M3 Lesson 16: Reason about and explain arithmetic patterns using units of 0 and 1 as they relate to multiplication and division. G3 M3 Lesson 17: Identify patterns in multiplication and division facts using the multiplication table. G3 M7 Lesson 33: Solidify fluency with Grade 3 skills. G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.
3.AR.OA.2 Apply the properties of operations to solve multiplication and division equations and justify thinking.	G3 M1 Topic C: Multiplication Using Units of 2 and 3 G3 M1 Lesson 15: Relate arrays to tape diagrams to model the commutative property of multiplication. G3 M1 Lesson 16: Use the distributive property as a strategy to find related multiplication facts. G3 M1 Lesson 18: Apply the distributive property to decompose units. G3 M1 Lesson 19: Apply the distributive property to decompose units.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
3.AR.OA.2 *continued*	G3 M3 Lesson 1: Study commutativity to find known facts of 6, 7, 8, and 9.
	G3 M3 Lesson 2: Apply the distributive and commutative properties to relate multiplication facts $5 \times n + n$ to $6 \times n$ and $n \times 6$ where n is the size of the unit.
	G3 M3 Lesson 5: Count by units of 7 to multiply and divide using number bonds to decompose.
	G3 M3 Lesson 6: Use the distributive property as a strategy to multiply and divide using units of 6 and 7.
	G3 M3 Lesson 8: Understand the function of parentheses and apply to solving problems.
	G3 M3 Lesson 9: Model the associative property as a strategy to multiply.
	G3 M3 Lesson 10: Use the distributive property as a strategy to multiply and divide.
	G3 M3 Lesson 12: Apply the distributive property and the fact $9 = 10 - 1$ as a strategy to multiply.
	G3 M3 Lesson 20: Use place value strategies and the associative property $n \times (m \times 10) = (n \times m) \times 10$ (where n and m are less than 10) to multiply by multiples of 10.
	G3 M7 Lesson 33: Solidify fluency with Grade 3 skills.
	G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.
3.AR.OA.3 Solve two-step authentic word problems using addition and subtraction within 1,000, including equations with a letter as an unknown.	G3 M1 Lesson 21: Solve two-step word problems involving all four operations and assess the reasonableness of answers.
	G3 M3 Lesson 18: Solve two-step word problems involving all four operations and assess the reasonableness of solutions.
	G3 M7 Topic A: Solving Word Problems

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
3.AR.OA.4 Use strategies and visual models to solve authentic word problems with multiplication within 100, including unknowns, using grouping models and equations.	G3 M1 Lesson 20: Solve two-step word problems involving multiplication and division and assess the reasonableness of answers. G3 M1 Lesson 21: Solve two-step word problems involving all four operations and assess the reasonableness of answers. G3 M2 Lesson 11: Solve mixed word problems involving all four operations with grams, kilograms, liters, and milliliters given in the same units. G3 M3 Lesson 3: Multiply and divide with familiar facts using a letter to represent the unknown. G3 M3 Lesson 7: Interpret the unknown in multiplication and division to model and solve problems using units of 6 and 7. G3 M3 Lesson 11: Interpret the unknown in multiplication and division to model and solve problems. G3 M3 Lesson 15: Interpret the unknown in multiplication and division to model and solve problems. G3 M3 Lesson 18: Solve two-step word problems involving all four operations and assess the reasonableness of solutions. G3 M7 Lesson 33: Solidify fluency with Grade 3 skills.
3.AR.OA.5 Use strategies and visual models to solve authentic word problems with division within 100, including unknowns, using grouping models and equations.	G3 M1 Topic D: Division Using Units of 2 and 3 G3 M1 Lesson 20: Solve two-step word problems involving multiplication and division and assess the reasonableness of answers. G3 M1 Lesson 21: Solve two-step word problems involving all four operations and assess the reasonableness of answers. G3 M2 Lesson 11: Solve mixed word problems involving all four operations with grams, kilograms, liters, and milliliters given in the same units. G3 M3 Lesson 3: Multiply and divide with familiar facts using a letter to represent the unknown. G3 M3 Lesson 7: Interpret the unknown in multiplication and division to model and solve problems using units of 6 and 7. G3 M3 Lesson 11: Interpret the unknown in multiplication and division to model and solve problems.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
3.AR.OA.5 *continued*	G3 M3 Lesson 15: Interpret the unknown in multiplication and division to model and solve problems.
	G3 M3 Lesson 18: Solve two-step word problems involving all four operations and assess the reasonableness of solutions.
	G3 M7 Lesson 33: Solidify fluency with Grade 3 skills.
3.AR.OA.6 Identify arithmetic patterns and explain them using the properties of operations.	G3 M3 Lesson 1: Study commutativity to find known facts of 6, 7, 8, and 9.
	G3 M3 Lesson 2: Apply the distributive and commutative properties to relate multiplication facts $5 \times n + n$ to $6 \times n$ and $n \times 6$ where n is the size of the unit.
	G3 M3 Lesson 13: Identify and use arithmetic patterns to multiply.
	G3 M3 Lesson 14: Identify and use arithmetic patterns to multiply.
	G3 M3 Lesson 16: Reason about and explain arithmetic patterns using units of 0 and 1 as they relate to multiplication and division.
	G3 M3 Lesson 17: Identify patterns in multiplication and division facts using the multiplication table.
	G3 M3 Lesson 19: Multiply by multiples of 10 using the place value chart.
	G3 M3 Lesson 20: Use place value strategies and the associative property $n \times (m \times 10) = (n \times m) \times 10$ (where n and m are less than 10) to multiply by multiples of 10.

Geometry and Measurement: Learners will use visualization, spatial reasoning, geometric modeling, and measurement to investigate the characteristics of figures, perform transformations, and construct logical arguments.

3.GM.G Geometry: Learners will compose and classify figures and shapes based on attributes and properties; represent and solve problems using a coordinate plane.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
3.GM.G.1 In two-dimensional shapes, identify lines, angles (right, acute, obtuse), and perpendicular and parallel lines.	G3 M7 Lesson 4: Compare and classify quadrilaterals. G3 M7 Lesson 5: Compare and classify other polygons. 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.
3.GM.G.2 Sort quadrilaterals into categories based on attributes.	G3 M7 Topic B: Attributes of Two-Dimensional Figures G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.
3.GM.G.3 Identify lines of symmetry in quadrilaterals.	G4 M4 Lesson 12: Recognize lines of symmetry for given two-dimensional figures. Identify line-symmetric figures, and draw lines of symmetry. 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.

Geometry and Measurement: Learners will use visualization, spatial reasoning, geometric modeling, and measurement to investigate the characteristics of figures, perform transformations, and construct logical arguments.

3.GM.M Measurement: Learners will represent and calculate measurement data, including time, money, and geometric measurement, and convert like measurement units within a given system.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
3.GM.M.1 Measure lengths using rulers marked with halves and fourths of an inch.	G3 M6 Lesson 5: Create ruler with 1-inch, $\frac{1}{2}$-inch, and $\frac{1}{4}$-inch intervals, and generate measurement data. G3 M7 Lesson 16: Use string to measure the perimeter of various circles to the nearest quarter inch.
3.GM.M.2 Measure and estimate liquid volumes and masses of objects using standard units. Solve one-step authentic word problems involving masses on volume given in the same units.	G3 M2 Topic B: Measuring Weight and Liquid Volume in Metric Units G3 M2 Lesson 12: Round two-digit measurements to the nearest ten on the vertical number line. G3 M2 Lesson 21: Estimate sums and differences of measurements by rounding, and then solve mixed word problems. G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.
3.GM.M.3 Tell and write time to the nearest minute and measure time intervals in minutes.	G3 M2 Topic A: Time Measurement and Problem Solving G3 M2 Lesson 12: Round two-digit measurements to the nearest ten on the vertical number line. G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.
3.GM.M.4 Solve elapsed time authentic word problems on the hour and the half-hour, using a variety of strategies.	G3 M2 Topic A: Time Measurement and Problem Solving G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
3.GM.M.5 Solve authentic word problems involving dollar bills, quarters, dimes, nickels, and pennies using the $ and ¢ symbols appropriately.	*Supplemental material is necessary to address this standard.*
3.GM.M.6 Solve problems involving the perimeters of rectangles given the side lengths or when given the perimeter and unknown side length(s).	G3 M7 Topic C: Problem Solving with Perimeter G3 M7 Lesson 23: Solve a variety of word problems with perimeter.
3.GM.M.7 Recognize area as an attribute of plane figures and understand concepts of area measurement.	G3 M4 Topic A: Foundations for Understanding Area G3 M4 Lesson 6: Draw rows and columns to determine the area of a rectangle given an incomplete array.
3.GM.M.8 Find the area of a rectangle with whole-number side lengths by modeling with unit squares; show that area can be additive and is the same as would be found by multiplying the side lengths.	G3 M4 Lesson 2: Decompose and recompose shapes to compare areas. G3 M4 Lesson 3: Model tiling with centimeter and inch unit squares as a strategy to measure area. G3 M4 Lesson 4: Relate side lengths with the number of tiles on a side. G3 M4 Topic B: Concepts of Area Measurement G3 M4 Lesson 9: Analyze different rectangles and reason about their area. G3 M4 Lesson 10: Apply the distributive property as a strategy to find the total area of a large rectangle by adding two products. G3 M4 Topic D: Applications of Area Using Side Lengths of Figures

Data, Probability, and Statistics: Learners will ask and answer questions by collecting, organizing, and displaying relevant data, drawing inferences and conclusions, making predictions, and understanding and applying basic concepts of probability.

3.DPS.D Data: Learners will represent and interpret data.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
3.DPS.D.1 Formulate questions to collect, organize, and represent data with more than four categories using scaled picture and bar graphs.	G3 M6 Topic A: Generate and Analyze Categorical Data G3 M6 Lesson 9: Analyze data to problem solve. G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.
3.DPS.D.2 Generate data and create line plots marked in whole numbers, halves, and fourths of a unit.	G3 M6 Topic B: Generate and Analyze Measurement Data G3 M7 Lesson 19: Use a line plot to record the number of rectangles constructed from a given number of unit squares. G3 M7 Lesson 22: Use a line plot to record the number of rectangles constructed in Lessons 20 and 21. G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.
3.DPS.D.3 Analyze data and make simple statements to solve one- and two-step problems using information from the graphs.	G3 M6 Topic A: Generate and Analyze Categorical Data G3 M6 Lesson 9: Analyze data to problem solve. G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.