Grade 7 | 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*
6–8.MA.P Learners can analyze information and formulate a flexible, systematic plan to problem-solve authentic situations and reflect on the reasonableness of the solution, making revisions when necessary.	Lessons in every module engage students in math attributes. These are indicated in margin notes included with every lesson.
6–8.MA.C Learners can create connections within and across concepts and provide examples of how they relate to other learning and ideas using supporting evidence.	Lessons in every module engage students in math attributes. These are indicated in margin notes included with every lesson.
6–8.MA.R Learners can reason logically, citing evidence to evaluate and explain what they see, think, and conclude through exploration and justification.	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.

7.NO.NS Number Systems: Learners will expand their knowledge of the number system to create connections and solve problems within and across concepts.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
7.NO.NS.1 Describe the absolute value of a number as its distance from zero on a number line.	G6 M3 Topic B: Order and Absolute Value
7.NO.NS.2 Recognize common fractions and decimal equivalencies up to a denominator of 10. Convert a rational number to a decimal using technology.	G7 M2 Lesson 13: Converting Between Fractions and Decimals Using Equivalent Fractions G7 M2 Lesson 14: Converting Rational Numbers to Decimals Using Long Division

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.

7.NO.O Operations: Learners will expand their computational fluency to create connections and solve problems within and across concepts.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
7.NO.O.1 Add, subtract, multiply, and divide integers using visual models and properties of operations in multi-step problems, including authentic problems.	G7 M2 Topic A: Addition and Subtraction of Integers and Rational Numbers G7 M2 Topic B: Multiplication and Division of Integers and Rational Numbers

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
7.NO.O.2 Add, subtract, multiply, and divide nonnegative fractions in multi-step problems, including authentic problems.	G7 M2 Lesson 7: Addition and Subtraction of Rational Numbers G7 M2 Lesson 8: Applying the Properties of Operations to Add and Subtract Rational Numbers G7 M2 Lesson 9: Applying the Properties of Operations to Add and Subtract Rational Numbers G7 M2 Lesson 15: Multiplication and Division of Rational Numbers G7 M2 Lesson 16: Applying the Properties of Operations to Multiply and Divide Rational Numbers
7.NO.O.3 Add, subtract, multiply, and divide nonnegative decimals to the hundredth place in multi-step problems using strategies or procedures, including authentic problems.	G6 M2 Topic B: Multi-Digit Decimal Operations—Adding, Subtracting, and Multiplying G6 M2 Lesson 14: The Division Algorithm—Converting Decimal Division into Whole Number Division Using Fractions G6 M2 Lesson 15: The Division Algorithm—Converting Decimal Division to Whole Number Division Using Mental Math

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.

7.AR.RP Ratios and Proportional Relationships: Learners will use ratios, rates, and proportions to model relationships and solve problems.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
7.AR.RP.1 Calculate unit rates associated with ratios of rational numbers, including ratios of lengths, areas, and other quantities measured in like or different units.	G7 M1 Topic B: Unit Rate and Constant of Proportionality G7 M1 Topic C: Ratios and Rates Involving Fractions

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
7.AR.RP.2 Analyze the relationship between the dependent and independent variables of a proportional relationship using graphs and tables. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, k)$ where k is the unit rate.	G6 M4 Lesson 31: Problems in Mathematical Terms G6 M4 Lesson 32: Multi-Step Problems in the Real World G7 M1 Topic A: Proportional Relationships G7 M1 Topic B: Unit Rate and Constant of Proportionality
7.AR.RP.3 Identify the constant of proportionality in tables, graphs, equations, diagrams, and descriptions of proportional relationships. Represent proportional relationships by an equation of the form $y = kx$, where k is the constant of proportionality, and describe the meaning of each variable (y, k, x) in the context of the situation.	G7 M1 Lesson 2: Proportional Relationships G7 M1 Topic B: Unit Rate and Constant of Proportionality G7 M1 Lesson 16: Relating Scale Drawings to Ratios and Rates G7 M1 Lesson 17: The Unit Rate as the Scale Factor G7 M4 Lesson 1: Percent G7 M4 Lesson 2: Part of a Whole as Percent G7 M4 Lesson 3: Comparing Quantities with Percent G7 M4 Lesson 4: Percent Increase and Decrease G7 M4 Lesson 6: Fluency with Percents G7 M4 Lesson 7: Markup and Markdown Problems G7 M4 Lesson 9: Problem Solving When the Percent Changes G7 M4 Lesson 10: Simple Interest G7 M4 Lesson 12: The Scale Factor as a Percent for a Scale Drawing

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
7.AR.RP.4 Use proportional relationships to solve multi-step problems involving ratios, percents, and scale drawings of geometric figures, including authentic problems.	G7 M1 Lesson 14: Multi-Step Ratio Problems G7 M1 Lesson 17: The Unit Rate as the Scale Factor G7 M1 Lesson 18: Computing Actual Lengths from a Scale Drawing G7 M1 Lesson 19: Computing Actual Areas from a Scale Drawing G7 M1 Lesson 20: An Exercise in Creating a Scale Drawing G7 M1 Lesson 21: An Exercise in Changing Scales G7 M1 Lesson 22: An Exercise in Changing Scales G7 M4 Lesson 1: Percent G7 M4 Lesson 3: Comparing Quantities with Percent G7 M4 Lesson 4: Percent Increase and Decrease G7 M4 Lesson 5: Find One Hundred Percent Given Another Percent G7 M4 Lesson 6: Fluency with Percents G7 M4 Topic B: Percent Problems Including More than One Whole G7 M4 Topic C: Scale Drawings G7 M4 Topic D: Population, Mixture, and Counting Problems Involving Percents

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.

7.AR.EE Expressions and Equations: Learners will look for, generate, and make sense of patterns, relationships, and algebraic symbols to represent mathematical models while adapting approaches in novel situations.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
7.AR.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions involving variables, integers, and/or nonnegative fractions and decimals with an emphasis on writing equivalent expressions.	G7 M2 Lesson 18: Writing, Evaluating, and Finding Equivalent Expressions with Rational Numbers G7 M2 Lesson 19: Writing, Evaluating, and Finding Equivalent Expressions with Rational Numbers G7 M3 Topic A: Use Properties of Operations to Generate Equivalent Expressions
7.AR.EE.2 Write and solve equations of the form $px + q = r$ and $p(x + q) = r$, including authentic problems.	G7 M2 Lesson 17: Comparing Tape Diagram Solutions to Algebraic Solutions G7 M2 Lesson 21: If-Then Moves with Integer Number Cards G7 M2 Lesson 22: Solving Equations Using Algebra G7 M2 Lesson 23: Solving Equations Using Algebra G7 M3 Topic B: Solve Problems Using Expressions, Equations, and Inequalities G7 M4 Lesson 10: Simple Interest G7 M4 Lesson 11: Tax, Commissions, Fees, and Other Real-World Percent Applications G7 M4 Lesson 17: Mixture Problems

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
7.AR.EE.3 Write and solve one- or two-step inequalities where coefficients and solutions are integers and/or nonnegative fractions and decimals, including authentic problems. Graph the solution set of the inequality and interpret it in the context of the problem.	G7 M3 Topic B: Solve Problems Using Expressions, Equations, and Inequalities

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.

7.GM.AV Area and Volume: Learners will use visualization and spatial reasoning to solve authentic and mathematical problems involving area, surface area, and volume of geometric figures.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
7.GM.AV.1 Describe the relationship between the circumference and diameter of a circle (pi). Apply given formulas to calculate the area and circumference of a circle, including authentic problems.	G7 M3 Lesson 16: The Most Famous Ratio of All G7 M3 Lesson 17: The Area of a Circle G7 M3 Lesson 18: More Problems on Area and Circumference G7 M3 Lesson 20: Composite Area Problems

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
7.GM.AV.2 Calculate areas of polygons by composing and/or decomposing them into rectangles and triangles, including authentic problems. Solve problems involving the surface area of prisms and right pyramids using nets, including authentic problems.	G7 M3 Lesson 19: Unknown Area Problems on the Coordinate Plane G7 M3 Lesson 20: Composite Area Problems G7 M3 Lesson 21: Surface Area G7 M3 Lesson 22: Surface Area G7 M3 Lesson 25: Volume and Surface Area G7 M3 Lesson 26: Volume and Surface Area G7 M6 Topic D: Problems Involving Area and Surface Area
7.GM.AV.3 Solve problems involving the volume of prisms and composite solids, including authentic problems.	G7 M3 Lesson 23: The Volume of a Right Prism G7 M3 Lesson 24: The Volume of a Right Prism G7 M3 Lesson 25: Volume and Surface Area G7 M3 Lesson 26: Volume and Surface Area G7 M6 Topic E: Problems Involving Volume

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.

7.GM.GF Geometric Figures: Learners will use visualization, spatial reasoning, and geometric modeling to investigate the characteristics of figures, perform transformations, and construct logical arguments.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
7.GM.GF.1 Draw triangles from given conditions using appropriate tools. Defend whether a unique triangle, multiple triangles, or no triangle can be constructed when given three measures of angles or sides.	G7 M6 Topic B: Constructing Triangles
7.GM.GF.2 Describe the following angle-pair relationships: supplementary angles, complementary angles, vertical angles, and adjacent angles. Solve for an unknown angle in a figure by applying facts about these angles.	G7 M3 Lesson 10: Angle Problems and Solving Equations G7 M3 Lesson 11: Angle Problems and Solving Equations G7 M6 Topic A: Unknown Angles

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.

7.DPS.D Data Analysis: Learners will ask and answer questions by collecting, organizing, and displaying relevant data, drawing inferences and conclusions, and making predictions.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
7.DPS.D.1 Identify the strengths and weaknesses of a population sample including bias in the process of the data collection.	G7 M5 Lesson 13: Populations, Samples, and Generalizing from a Sample to a Population G7 M5 Lesson 14: Selecting a Sample G7 M5 Lesson 15: Random Sampling G7 M5 Lesson 18: Sampling Variability and the Effect of Sample Size G7 M5 Lesson 19: Understanding Variability When Estimating a Population Proportion
7.DPS.D.2 Analyze and draw inferences about a population using single and multiple random samples by using given measures of center and variability for the numerical data set.	G7 M5 Lesson 14: Selecting a Sample G7 M5 Lesson 15: Random Sampling G7 M5 Lesson 16: Methods for Selecting a Random Sample G7 M5 Lesson 17: Sampling Variability G7 M5 Lesson 18: Sampling Variability and the Effect of Sample Size G7 M5 Lesson 19: Understanding Variability When Estimating a Population Proportion G7 M5 Lesson 20: Estimating a Population Proportion G7 M5 Topic D: Comparing Populations

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.

7.DPS.P Probability: Learners will understand and apply basic concepts of probability.

North Dakota Mathematics K–12 Standards	Aligned Components of *Eureka Math*
7.DPS.P.1 Develop a probability model to find probabilities of theoretical events and contrast probabilities from an experimental model.	G7 M5 Lesson 4: Calculating Probabilities for Chance Experiments with Equally Likely Outcomes G7 M5 Lesson 5: Chance Experiments with Outcomes That Are Not Equally Likely G7 M5 Lesson 8: The Difference Between Theoretical Probabilities and Estimated Probabilities G7 M5 Lesson 9: Comparing Estimated Probabilities to Probabilities Predicted by a Model G7 M5 Lesson 12: Applying Probability to Make Informed Decisions
7.DPS.P.2 Develop a probability model to find theoretical probabilities of independent compound events.	G7 M5 Lesson 6: Using Tree Diagrams to Represent a Sample Space and to Calculate Probabilities G7 M5 Lesson 7: Calculating Probabilities of Compound Events G7 M5 Lesson 10: Conducting a Simulation to Estimate the Probability of an Event G7 M5 Lesson 11: Conducting a Simulation to Estimate the Probability of an Event