
7–8 | Minnesota K–12 Academic Standards in 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* aha 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 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 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.

Number & Operation

Read, write, represent and compare positive and negative rational numbers, expressed as integers, fractions and decimals.

Minnesota K–12 Academic Standards in Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>7.1.1.1</p> <p>Know that every rational number can be written as the ratio of two integers or as a terminating or repeating decimal. Recognize that π is not rational, but that it can be approximated by rational numbers such as $\frac{22}{7}$ and 3.14.</p>	<p>7–8 M1 Lesson 8: Dividing Integers and Rational Numbers</p> <p>7–8 M1 Lesson 9: Decimal Expansions of Rational Numbers</p> <p>7–8 M1 Lesson 22: Rational and Irrational Numbers</p> <p>7–8 M3 Lesson 3: Exploring and Constructing Circles</p> <p><i>Supplemental material is necessary to address approximating π as $\frac{22}{7}$.</i></p>
<p>7.1.1.2</p> <p>Understand that division of two integers will always result in a rational number. Use this information to interpret the decimal result of a division problem when using a calculator.</p>	<p>7–8 M1 Lesson 8: Dividing Integers and Rational Numbers</p> <p>7–8 M1 Lesson 9: Decimal Expansions of Rational Numbers</p>
<p>7.1.1.3</p> <p>Locate positive and negative rational numbers on the number line, understand the concept of opposites, and plot pairs of positive and negative rational numbers on a coordinate grid.</p>	<p>6 M3 Topic A: Integers and Rational Numbers</p> <p>6 M3 Topic C: The Coordinate Plane</p>
<p>7.1.1.4</p> <p>Compare positive and negative rational numbers expressed in various forms using the symbols $<$, $>$, $=$, \leq, \geq.</p>	<p>6 M3 Lesson 5: Comparing Rational Numbers</p> <p><i>Supplemental material is necessary to address using the symbols \leq and \geq.</i></p>

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<p>7.1.1.5</p> <p>Recognize and generate equivalent representations of positive and negative rational numbers, including equivalent fractions.</p>	<p>7–8 M1 Lesson 9: Decimal Expansions of Rational Numbers</p> <p>7–8 M2 Lesson 6: Expressing Repeating Decimals as Fractions</p>
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Number & Operation

Calculate with positive and negative rational numbers, and rational numbers with whole-number exponents, to solve real-world and mathematical problems.

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Aligned Components of *Eureka Math*²

<p>7.1.2.1</p> <p>Add, subtract, multiply and divide positive and negative rational numbers that are integers, fractions and terminating decimals; use efficient and generalizable procedures, including standard algorithms; raise positive rational numbers to whole-number exponents.</p>	<p>7–8 M1 Topic A: Add and Subtract Rational Numbers</p> <p>7–8 M1 Topic B: Multiply and Divide Rational Numbers</p>
<p>7.1.2.2</p> <p>Use real-world contexts and the inverse relationship between addition and subtraction to explain why the procedures of arithmetic with negative rational numbers make sense.</p>	<p>7–8 M1 Topic A: Add and Subtract Rational Numbers</p>

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<p>7.1.2.3</p> <p>Understand that calculators and other computing technologies often truncate or round numbers.</p>	<p>7–8 M1 Lesson 9: Decimal Expansions of Rational Numbers</p>
<p>7.1.2.4</p> <p>Solve problems in various contexts involving calculations with positive and negative rational numbers and positive integer exponents, including computing simple and compound interest.</p>	<p>7–8 M1 Lesson 7: Exponential Expressions and Relating Multiplication to Division</p> <p>7–8 M2 Lesson 11: Using Linear Equations to Solve Real-World Problems</p> <p>7–8 M2 Lesson 17: Using Proportional Reasoning to Solve Multi-Step Problems</p> <p>7–8 M2 Lesson 18: Handstand Sprint</p> <p>7–8 M2 Lesson 23: What Is the Best Deal?</p> <p>7–8 M2 Lesson 24: Simple Interest</p> <p>7–8 M5 Lesson 11: Surface Areas of Prisms and Pyramids</p> <p>7–8 M5 Lesson 12: Surface Area of Cylinders</p> <p>7–8 M5 Topic D: Volume</p> <p><i>Supplemental material is necessary to address compound interest.</i></p>
<p>7.1.2.5</p> <p>Use proportional reasoning to solve problems involving ratios in various contexts.</p>	<p>7–8 M2 Lesson 16: Applying Proportional Reasoning</p> <p>7–8 M2 Lesson 17: Using Proportional Reasoning to Solve Multi-Step Problems</p> <p>7–8 M2 Lesson 18: Handstand Sprint</p> <p>7–8 M2 Topic D: Percents and Proportional Relationships</p>

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<p>7.1.2.6</p> <p>Demonstrate an understanding of the relationship between the absolute value of a rational number and distance on a number line. Use the symbol for absolute value.</p>	<p>6 M3 Lesson 7: Absolute Value</p> <p>6 M3 Lesson 8: Absolute Value and Order</p> <p>6 M3 Lesson 9: Interpreting Order and Distance in Real-World Situations</p>
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Number & Operation

Read, write, compare, classify and represent real numbers, and use them to solve problems in various contexts.

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Aligned Components of *Eureka Math*²

<p>8.1.1.1</p> <p>Classify real numbers as rational or irrational. Know that when a square root of a positive integer is not an integer, then it is irrational. Know that the sum of a rational number and an irrational number is irrational, and the product of a non-zero rational number and an irrational number is irrational.</p>	<p>7–8 M1 Lesson 20: Using the Pythagorean Theorem</p> <p>7–8 M1 Lesson 22: Rational and Irrational Numbers</p> <p>7–8 M1 Lesson 23: Revisiting Equations with Squares and Cubes</p> <p>A1 M4 Lesson 13: Using Square Roots to Solve Quadratic Equations</p> <p>A1 M4 Lesson 17: Rewriting Square Roots</p>
<p>8.1.1.2</p> <p>Compare real numbers; locate real numbers on a number line. Identify the square root of a positive integer as an integer, or if it is not an integer, locate it as a real number between two consecutive positive integers.</p>	<p>7–8 M1 Lesson 18: Solving Equations with Squares and Cubes</p> <p>7–8 M1 Lesson 20: Using the Pythagorean Theorem</p> <p>7–8 M1 Lesson 21: Approximating Values of Roots</p> <p>7–8 M1 Lesson 22: Rational and Irrational Numbers</p>

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<p>8.1.1.3</p> <p>Determine rational approximations for solutions to problems involving real numbers.</p>	<p>7–8 M1 Lesson 20: Using the Pythagorean Theorem</p> <p>7–8 M1 Lesson 21: Approximating Values of Roots</p> <p>7–8 M1 Lesson 22: Rational and Irrational Numbers</p>
<p>8.1.1.4</p> <p>Know and apply the properties of positive and negative integer exponents to generate equivalent numerical expressions.</p>	<p>7–8 M1 Lesson 11: Products of Exponential Expressions with Positive Whole-Number Exponents</p> <p>7–8 M1 Lesson 12: More Properties of Exponents</p> <p>7–8 M1 Lesson 13: Making Sense of Integer Exponents</p>
<p>8.1.1.5</p> <p>Express approximations of very large and very small numbers using scientific notation; understand how calculators display numbers in scientific notation. Multiply and divide numbers expressed in scientific notation, express the answer in scientific notation, using the correct number of significant digits when physical measurements are involved.</p>	<p>7–8 M1 Lesson 10: Large and Small Positive Numbers</p> <p>7–8 M1 Lesson 14: Writing Very Large and Very Small Numbers in Scientific Notation</p> <p>7–8 M1 Lesson 15: Operations with Numbers Written in Scientific Notation</p> <p>7–8 M1 Lesson 16: Applications with Numbers Written in Scientific Notation</p> <p>7–8 M1 Lesson 17: Get to the Point</p> <p><i>Supplemental material is necessary to address using the correct number of significant digits when physical measurements are involved.</i></p>

Algebra

Understand the concept of proportionality in real-world and mathematical situations, and distinguish between proportional and other relationships.

Minnesota K–12 Academic Standards in Mathematics

Aligned Components of *Eureka Math*²

<p>7.2.1.1</p> <p>Understand that a relationship between two variables, x and y, is proportional if it can be expressed in the form $\frac{y}{x} = k$ or $y = kx$. Distinguish proportional relationships from other relationships, including inversely proportional relationships ($xy = k$ or $y = \frac{k}{x}$).</p>	<p>7–8 M2 Lesson 13: Exploring Tables of Proportional Relationships</p> <p>7–8 M2 Lesson 15: Relating Representations of Proportional Relationships</p> <p>7–8 M2 Lesson 16: Applying Proportional Reasoning</p> <p>7–8 M2 Lesson 17: Using Proportional Reasoning to Solve Multi-Step Problems</p> <p>7–8 M2 Lesson 18: Handstand Sprint</p> <p>7–8 M2 Lesson 19: Proportional Reasoning and Percents</p> <p><i>Supplemental material is necessary to address inversely proportional relationships.</i></p>
<p>7.2.1.2</p> <p>Understand that the graph of a proportional relationship is a line through the origin whose slope is the unit rate (constant of proportionality). Know how to use graphing technology to examine what happens to a line when the unit rate is changed.</p>	<p>7–8 M2 Lesson 14: Exploring Graphs of Proportional Relationships</p> <p>7–8 M2 Lesson 15: Relating Representations of Proportional Relationships</p> <p>7–8 M4 Lesson 5: Proportional Relationships and Slope</p> <p><i>Supplemental material is necessary to address using graphing technology to examine what happens to a line when the unit rate is changed.</i></p>

Algebra

Recognize proportional relationships in real-world and mathematical situations; represent these and other relationships with tables, verbal descriptions, symbols and graphs; solve problems involving proportional relationships and explain results in the original context.

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<p>7.2.2.1</p> <p>Represent proportional relationships with tables, verbal descriptions, symbols, equations and graphs; translate from one representation to another. Determine the unit rate (constant of proportionality or slope) given any of these representations.</p>	<p>7–8 M2 Lesson 12: An Experiment with Ratios and Rates</p> <p>7–8 M2 Lesson 13: Exploring Tables of Proportional Relationships</p> <p>7–8 M2 Lesson 14: Exploring Graphs of Proportional Relationships</p> <p>7–8 M2 Lesson 15: Relating Representations of Proportional Relationships</p> <p>7–8 M2 Lesson 16: Applying Proportional Reasoning</p>
<p>7.2.2.2</p> <p>Solve multi-step problems involving proportional relationships in numerous contexts.</p>	<p>7–8 M2 Lesson 16: Applying Proportional Reasoning</p> <p>7–8 M2 Lesson 17: Using Proportional Reasoning to Solve Multi-Step Problems</p> <p>7–8 M2 Lesson 18: Handstand Sprint</p> <p>7–8 M2 Topic D: Percents and Proportional Relationships</p>
<p>7.2.2.3</p> <p>Use knowledge of proportions to assess the reasonableness of solutions.</p>	<p><i>Supplemental material is necessary to address this standard.</i></p>
<p>7.2.2.4</p> <p>Represent real-world or mathematical situations using equations and inequalities involving variables and positive and negative rational numbers.</p>	<p>7–8 M2 Lesson 3: Solving Equations</p> <p>7–8 M2 Lesson 4: Using Equations to Solve Inequalities</p> <p>7–8 M2 Lesson 5: Solving Problems Involving Equations and Inequalities</p>

Algebra

Apply understanding of order of operations and algebraic properties to generate equivalent numerical and algebraic expressions containing positive and negative rational numbers and grouping symbols; evaluate such expressions.

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Aligned Components of *Eureka Math*²

<p>7.2.3.1</p> <p>Use properties of algebra to generate equivalent numerical and algebraic expressions containing rational numbers, grouping symbols and whole-number exponents. Properties of algebra include associative, commutative and distributive laws.</p>	<p>7 M3 Lesson 2: The Distributive Property and the Tabular Model</p> <p>7 M3 Lesson 4: Adding and Subtracting Expressions</p> <p>7 M3 Lesson 5: Factoring Expressions</p> <p>7 M3 Lesson 6: Comparing Expressions</p> <p>7–8 M1 Lesson 7: Exponential Expressions and Relating Multiplication to Division</p> <p>7–8 M2 Lesson 2: Using Equivalent Expressions to Solve Equations</p> <p>7–8 M2 Lesson 21: Discount, Markup, Sales Tax, and Tip</p> <p>7–8 M2 Lesson 22: Percent Increase and Percent Decrease</p>
<p>7.2.3.2</p> <p>Evaluate algebraic expressions containing rational numbers and whole-number exponents at specified values of their variables.</p>	<p>7 M3 Lesson 2: The Distributive Property and the Tabular Model</p> <p><i>Supplemental material is necessary to fully address this standard.</i></p>
<p>7.2.3.3</p> <p>Apply understanding of order of operations and grouping symbols when using calculators and other technologies.</p>	<p><i>Supplemental material is necessary to address this standard.</i></p>

Algebra

Represent real-world and mathematical situations using equations with variables. Solve equations symbolically, using the properties of equality. Also solve equations graphically and numerically. Interpret solutions in the original context.

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<p>7.2.4.1</p> <p>Represent relationships in various contexts with equations involving variables and positive and negative rational numbers. Use the properties of equality to solve for the value of a variable. Interpret the solution in the original context.</p>	<p>7–8 M2 Lesson 1: Finding Unknown Angle Measures</p> <p>7–8 M2 Lesson 3: Solving Equations</p> <p>7–8 M2 Lesson 5: Solving Problems Involving Equations and Inequalities</p> <p><i>Supplemental material is necessary to address the properties of equality with equations of the forms $px + q = r$ and $p(x + q) = r$. The properties of equality are addressed in 7–8 M2 Topic B with equations that meet 8.2.4.2.</i></p>
<p>7.2.4.2</p> <p>Solve equations resulting from proportional relationships in various contexts.</p>	<p>7–8 M2 Lesson 16: Applying Proportional Reasoning</p> <p>7–8 M2 Lesson 17: Using Proportional Reasoning to Solve Multi-Step Problems</p> <p>7–8 M2 Lesson 18: Handstand Sprint</p> <p>7–8 M2 Topic D: Percents and Proportional Relationships</p>

Algebra

Understand the concept of function in real-world and mathematical situations, and distinguish between linear and non-linear functions.

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Aligned Components of *Eureka Math*²

<p>8.2.1.1</p> <p>Understand that a function is a relationship between an independent variable and a dependent variable in which the value of the independent variable determines the value of the dependent variable. Use functional notation, such as $f(x)$, to represent such relationships.</p>	<p>7–8 M5 Lesson 1: Motion and Speed</p> <p>7–8 M5 Lesson 2: Definition of a Function</p> <p>7–8 M5 Lesson 4: More Examples of Functions</p> <p>7–8 M5 Lesson 5: Graphs of Functions and Equations</p> <p>A1 M3 Topic A: Functions and Their Graphs</p>
<p>8.2.1.2</p> <p>Use linear functions to represent relationships in which changing the input variable by some amount leads to a change in the output variable that is a constant times that amount.</p>	<p>7–8 M5 Lesson 6: Linear Functions and Rate of Change</p> <p>7–8 M5 Lesson 7: Interpreting Rate of Change and Initial Value</p> <p>7–8 M5 Lesson 23: Applications of Volume</p>
<p>8.2.1.3</p> <p>Understand that a function is linear if it can be expressed in the form $f(x) = mx + b$ or if its graph is a straight line.</p>	<p>7–8 M5 Lesson 3: Linear Functions and Proportionality</p> <p>7–8 M5 Lesson 6: Linear Functions and Rate of Change</p> <p>7–8 M5 Lesson 10: Graphs of Nonlinear Functions</p>

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<p>8.2.1.4</p> <p>Understand that an arithmetic sequence is a linear function that can be expressed in the form $f(x) = mx + b$, where $x = 0, 1, 2, 3, \dots$</p>	<p>A1 M5 Lesson 5: Arithmetic and Geometric Sequences</p> <p>A1 M5 Lesson 6: Representations of Arithmetic and Geometric Sequences</p>
<p>8.2.1.5</p> <p>Understand that a geometric sequence is a non-linear function that can be expressed in the form $f(x) = ab^x$, where $x = 0, 1, 2, 3, \dots$</p>	<p>A1 M5 Lesson 5: Arithmetic and Geometric Sequences</p> <p>A1 M5 Lesson 6: Representations of Arithmetic and Geometric Sequences</p> <p>A1 M5 Lesson 7: Sierpinski Triangle</p> <p>A1 M5 Lesson 8: Exponential Functions</p>

Algebra

Recognize linear functions in real-world and mathematical situations; represent linear functions and other functions with tables, verbal descriptions, symbols and graphs; solve problems involving these functions and explain results in the original context.

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Aligned Components of *Eureka Math*²

<p>8.2.2.1</p> <p>Represent linear functions with tables, verbal descriptions, symbols, equations and graphs; translate from one representation to another.</p>	<p>7–8 M5 Lesson 6: Linear Functions and Rate of Change</p> <p>7–8 M5 Lesson 7: Interpreting Rate of Change and Initial Value</p> <p>7–8 M5 Lesson 23: Applications of Volume</p>
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<p>8.2.2.2</p> <p>Identify graphical properties of linear functions including slopes and intercepts. Know that the slope equals the rate of change, and that the y-intercept is zero when the function represents a proportional relationship.</p>	<p>7–8 M4 Lesson 5: Proportional Relationships and Slope</p> <p>7–8 M4 Lesson 6: Slopes of Rising Lines and Falling Lines</p> <p>7–8 M4 Lesson 7: Using Coordinates to Find Slope</p> <p>7–8 M4 Lesson 8: Slope-Intercept Form of the Equation of a Line</p> <p>7–8 M5 Lesson 6: Linear Functions and Rate of Change</p> <p>7–8 M5 Lesson 7: Interpreting Rate of Change and Initial Value</p>
<p>8.2.2.3</p> <p>Identify how coefficient changes in the equation $f(x) = mx + b$ affect the graphs of linear functions. Know how to use graphing technology to examine these effects.</p>	<p><i>Supplemental material is necessary to address this standard.</i></p>
<p>8.2.2.4</p> <p>Represent arithmetic sequences using equations, tables, graphs and verbal descriptions, and use them to solve problems.</p>	<p>A1 M5 Lesson 5: Arithmetic and Geometric Sequences</p> <p>A1 M5 Lesson 6: Representations of Arithmetic and Geometric Sequences</p> <p><i>Supplemental material is necessary to address creating tables and verbal descriptions that represent arithmetic sequences.</i></p>
<p>8.2.2.5</p> <p>Represent geometric sequences using equations, tables, graphs and verbal descriptions, and use them to solve problems.</p>	<p>A1 M5 Lesson 5: Arithmetic and Geometric Sequences</p> <p>A1 M5 Lesson 6: Representations of Arithmetic and Geometric Sequences</p> <p>A1 M5 Lesson 7: Sierpinski Triangle</p> <p><i>Supplemental material is necessary to address creating verbal descriptions that represent geometric sequences.</i></p>

Algebra

Generate equivalent numerical and algebraic expressions and use algebraic properties to evaluate expressions.

Minnesota K–12 Academic Standards in Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>8.2.3.1</p> <p>Evaluate algebraic expressions, including expressions containing radicals and absolute values, at specified values of their variables.</p>	<p><i>Supplemental material is necessary to address this standard.</i></p>
<p>8.2.3.2</p> <p>Justify steps in generating equivalent expressions by identifying the properties used, including the properties of algebra. Properties include the associative, commutative and distributive laws, and the order of operations, including grouping symbols.</p>	<p>7 M3 Topic A: Equivalent Expressions</p> <p>7–8 M2 Lesson 2: Using Equivalent Expressions to Solve Equations</p>

Algebra

Represent real-world and mathematical situations using equations and inequalities involving linear expressions.

Solve equations and inequalities symbolically and graphically. Interpret solutions in the original context.

Minnesota K–12 Academic Standards in Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>8.2.4.1</p> <p>Use linear equations to represent situations involving a constant rate of change, including proportional and non-proportional relationships.</p>	<p>7–8 M2 Lesson 3: Solving Equations</p> <p>7–8 M2 Lesson 4: Using Equations to Solve Inequalities</p> <p>7–8 M2 Lesson 5: Solving Problems Involving Equations and Inequalities</p> <p>7–8 M2 Topic B: Multi-Step Equations and Their Solutions</p> <p>7–8 M2 Lesson 13: Exploring Tables of Proportional Relationships</p>

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<p>8.2.4.1 <i>continued</i></p>	<p>7–8 M2 Lesson 15: Relating Representations of Proportional Relationships 7–8 M2 Lesson 16: Applying Proportional Reasoning 7–8 M2 Lesson 17: Using Proportional Reasoning to Solve Multi-Step Problems 7–8 M2 Lesson 18: Handstand Sprint 7–8 M2 Topic D: Percents and Proportional Relationships 7–8 M5 Lesson 6: Linear Functions and Rate of Change 7–8 M5 Lesson 7: Interpreting Rate of Change and Initial Value 7–8 M5 Lesson 23: Applications of Volume</p>
<p>8.2.4.2</p> <p>Solve multi-step equations in one variable. Solve for one variable in a multi-variable equation in terms of the other variables. Justify the steps by identifying the properties of equalities used.</p>	<p>7–8 M2 Topic B: Multi-Step Equations and Their Solutions A1 M1 Lesson 12: Rearranging Formulas</p>
<p>8.2.4.3</p> <p>Express linear equations in slope-intercept, point-slope and standard forms, and convert between these forms. Given sufficient information, find an equation of a line.</p>	<p>7–8 M4 Lesson 1: Solutions to Linear Equations in Two Variables 7–8 M4 Lesson 8: Slope-Intercept Form of the Equation of a Line 7–8 M4 Lesson 9: Point-Slope Form of the Equation of a Line 7–8 M4 Lesson 10: Comparing Equations in Different Forms</p>
<p>8.2.4.4</p> <p>Use linear inequalities to represent relationships in various contexts.</p>	<p>7–8 M2 Lesson 5: Solving Problems Involving Equations and Inequalities</p>

Minnesota K–12 Academic Standards in Mathematics**Aligned Components of *Eureka Math*²**

<p>8.2.4.5</p> <p>Solve linear inequalities using properties of inequalities. Graph the solutions on a number line.</p>	<p>7–8 M2 Lesson 4: Using Equations to Solve Inequalities</p> <p>7–8 M2 Lesson 5: Solving Problems Involving Equations and Inequalities</p> <p>A1 M1 Lesson 13: Solving Linear Inequalities in One Variable</p>
<p>8.2.4.6</p> <p>Represent relationships in various contexts with equations and inequalities involving the absolute value of a linear expression. Solve such equations and inequalities and graph the solutions on a number line.</p>	<p>A1 M1 Lesson 16: Solving Absolute Value Equations</p> <p>A1 M1 Lesson 17: Solving Absolute Value Inequalities</p>
<p>8.2.4.7</p> <p>Represent relationships in various contexts using systems of linear equations. Solve systems of linear equations in two variables symbolically, graphically and numerically.</p>	<p>7–8 M4 Topic C: Solving Systems of Linear Equations</p> <p>7–8 M4 Topic D: Writing and Solving Systems of Linear Equations</p>
<p>8.2.4.8</p> <p>Understand that a system of linear equations may have no solution, one solution, or an infinite number of solutions. Relate the number of solutions to pairs of lines that are intersecting, parallel or identical. Check whether a pair of numbers satisfies a system of two linear equations in two unknowns by substituting the numbers into both equations.</p>	<p>7–8 M4 Lesson 11: Introduction to Systems of Linear Equations</p> <p>7–8 M4 Lesson 12: Identifying Solutions</p> <p>7–8 M4 Lesson 13: More Than One Solution</p> <p>7–8 M4 Lesson 16: Choosing a Solution Method</p> <p>7–8 M4 Lesson 19: Back to the Coordinate Plane</p> <p>7–8 M4 Lesson 20: Modeling a Real-World Problem</p>

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<p>8.2.4.9</p> <p>Use the relationship between square roots and squares of a number to solve problems.</p>	<p>7–8 M1 Lesson 18: Solving Equations with Squares and Cubes</p> <p>7–8 M1 Lesson 19: The Pythagorean Theorem</p> <p>7–8 M1 Lesson 20: Using the Pythagorean Theorem</p> <p>7–8 M1 Lesson 23: Revisiting Equations with Squares and Cubes</p> <p>7–8 M3 Lesson 17: Applications of the Pythagorean Theorem</p> <p>7–8 M3 Lesson 29: Using Similar Figures to Find Unknown Side Lengths</p> <p>7–8 M5 Lesson 19: Volumes of Pyramids and Cones</p>
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Geometry & Measurement

Use reasoning with proportions and ratios to determine measurements, justify formulas and solve real-world and mathematical problems involving circles and related geometric figures.

Minnesota K–12 Academic Standards in Mathematics

Aligned Components of *Eureka Math*²

<p>7.3.1.1</p> <p>Demonstrate an understanding of the proportional relationship between the diameter and circumference of a circle and that the unit rate (constant of proportionality) is π. Calculate the circumference and area of circles and sectors of circles to solve problems in various contexts.</p>	<p>7–8 M3 Lesson 3: Exploring and Constructing Circles</p> <p>7–8 M3 Lesson 4: Area and Circumference of a Circle</p> <p>7–8 M3 Lesson 5: Area and Circumference of Circular Regions</p> <p>7–8 M3 Lesson 6: Watering a Lawn</p> <p><i>Supplemental material is necessary to address the term sector.</i></p>
<p>7.3.1.2</p> <p>Calculate the volume and surface area of cylinders and justify the formulas used.</p>	<p>7–8 M5 Lesson 12: Surface Area of Cylinders</p> <p>7–8 M5 Lesson 17: Volume of Cylinders</p>

Geometry & Measurement

Analyze the effect of change of scale, translations and reflections on the attributes of two-dimensional figures.

Minnesota K–12 Academic Standards in Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>7.3.2.1</p> <p>Describe the properties of similarity, compare geometric figures for similarity, and determine scale factors.</p>	<p>7–8 M3 Topic E: Similarity</p>
<p>7.3.2.2</p> <p>Apply scale factors, length ratios and area ratios to determine side lengths and areas of similar geometric figures.</p>	<p>7–8 M3 Lesson 18: Scale Drawings</p> <p>7–8 M3 Lesson 19: Finding Actual Distances from a Scale Drawing</p> <p>7–8 M3 Lesson 20: Scale and Scale Factor</p> <p>7–8 M3 Lesson 21: Modeling with Scale Drawings</p>
<p>7.3.2.3</p> <p>Use proportions and ratios to solve problems involving scale drawings and conversions of measurement units.</p>	<p>7–8 M3 Topic D: Scale Drawings and Dilations</p> <p><i>Supplemental material is necessary to address using proportions to solve problems involving scale drawings and conversions of measurement units.</i></p>
<p>7.3.2.4</p> <p>Graph and describe translations and reflections of figures on a coordinate grid and determine the coordinates of the vertices of the figure after the transformation.</p>	<p>7–8 M3 Lesson 9: Rigid Motions on the Coordinate Plane</p>

Geometry & Measurement

Solve problems involving right triangles using the Pythagorean Theorem and its converse.

Minnesota K–12 Academic Standards in Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>8.3.1.1</p> <p>Use the Pythagorean Theorem to solve problems involving right triangles.</p>	<p>7–8 M1 Lesson 19: The Pythagorean Theorem</p> <p>7–8 M3 Lesson 16: Proving the Converse of the Pythagorean Theorem</p> <p>7–8 M3 Lesson 17: Applications of the Pythagorean Theorem</p> <p>7–8 M3 Lesson 29: Using Similar Figures to Find Unknown Side Lengths</p> <p>7–8 M5 Lesson 19: Volumes of Pyramids and Cones</p>
<p>8.3.1.2</p> <p>Determine the distance between two points on a horizontal or vertical line in a coordinate system. Use the Pythagorean Theorem to find the distance between any two points in a coordinate system.</p>	<p>6 M3 Lesson 15: Distance in the Coordinate Plane</p> <p>7–8 M3 Lesson 17: Applications of the Pythagorean Theorem</p>
<p>8.3.1.3</p> <p>Informally justify the Pythagorean Theorem by using measurements, diagrams and computer software.</p>	<p>7–8 M1 Lesson 19: The Pythagorean Theorem</p> <p>7–8 M3 Lesson 15: Proving the Pythagorean Theorem</p>

Geometry & Measurement

Solve problems involving parallel and perpendicular lines on a coordinate system.

Minnesota K–12 Academic Standards in Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>8.3.2.1</p> <p>Understand and apply the relationships between the slopes of parallel lines and between the slopes of perpendicular lines. Dynamic graphing software may be used to examine these relationships.</p>	<p>7–8 M4 Lesson 12: Identifying Solutions</p> <p><i>Supplementary material is necessary to address the relationships between the slopes of perpendicular lines.</i></p>
<p>8.3.2.2</p> <p>Analyze polygons on a coordinate system by determining the slopes of their sides.</p>	<p><i>Supplemental material is necessary to address this standard.</i></p>
<p>8.3.2.3</p> <p>Given a line on a coordinate system and the coordinates of a point not on the line, find lines through that point that are parallel and perpendicular to the given line, symbolically and graphically.</p>	<p><i>Supplemental material is necessary to address this standard.</i></p>

Data Analysis & Probability

Use mean, median and range to draw conclusions about data and make predictions.

Minnesota K–12 Academic Standards in Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>7.4.1.1</p> <p>Design simple experiments and collect data. Determine mean, median and range for quantitative data and from data represented in a display. Use these quantities to draw conclusions about the data, compare different data sets, and make predictions.</p>	<p>6 M6 Lesson 2: Describing a Data Distribution</p> <p>6 M6 Lesson 7: Using the Mean to Describe the Center</p> <p>6 M6 Lesson 8: The Mean as a Balance Point</p> <p>6 M6 Lesson 9: Variability in a Data Distribution</p> <p>6 M6 Lesson 12: Using the Median to Describe the Center</p> <p>6 M6 Lesson 15: More Practice with Box Plots</p> <p>6 M6 Lesson 16: Interpreting Box Plots</p> <p>6 M6 Lesson 19: Comparing Data Distributions</p> <p>6 M6 Lesson 22: Presenting Statistical Projects</p>
<p>7.4.1.2</p> <p>Describe the impact that inserting or deleting a data point has on the mean and the median of a data set. Know how to create data displays using a spreadsheet to examine this impact.</p>	<p><i>Supplemental material is necessary to address this standard.</i></p>

Data Analysis & Probability

Display and interpret data in a variety of ways, including circle graphs and histograms.

Minnesota K–12 Academic Standards in Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>7.4.2.1</p> <p>Use reasoning with proportions to display and interpret data in circle graphs (pie charts) and histograms. Choose the appropriate data display and know how to create the display using a spreadsheet or other graphing technology.</p>	<p>6 M6 Lesson 4: Creating a Histogram</p> <p>6 M6 Lesson 5: Comparing Data Displays</p> <p>6 M6 Lesson 6: Selecting a Data Display</p> <p><i>Supplemental material is necessary to address displaying and interpreting data in circle graphs and using technology to create a data display.</i></p>

Data Analysis & Probability

Calculate probabilities and reason about probabilities using proportions to solve real-world and mathematical problems.

Minnesota K–12 Academic Standards in Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>7.4.3.1</p> <p>Use random numbers generated by a calculator or a spreadsheet or taken from a table to simulate situations involving randomness, make a histogram to display the results, and compare the results to known probabilities.</p>	<p>7–8 M6 Lesson 8: Probability Simulations</p> <p>7–8 M6 Lesson 9: Simulations with Random Number Tables</p> <p><i>Supplemental material is necessary to address making a histogram to display the results.</i></p>
<p>7.4.3.2</p> <p>Calculate probability as a fraction of sample space or as a fraction of area. Express probabilities as percents, decimals and fractions.</p>	<p>7–8 M6 Lesson 1: What Is Probability?</p> <p>7–8 M6 Lesson 2: Outcomes of Chance Experiments</p> <p>7–8 M6 Lesson 3: Theoretical Probability</p> <p>7–8 M6 Lesson 4: Multistage Experiments</p> <p>7–8 M6 Lesson 6: The Law of Large Numbers</p>

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<p>7.4.3.3</p> <p>Use proportional reasoning to draw conclusions about and predict relative frequencies of outcomes based on probabilities.</p>	<p>7–8 M6 Lesson 1: What Is Probability?</p> <p>7–8 M6 Lesson 2: Outcomes of Chance Experiments</p> <p>7–8 M6 Lesson 5: Outcomes That Are Not Equally Likely</p> <p>7–8 M6 Lesson 7: Picking Blue</p>
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Data Analysis & Probability

Interpret data using scatterplots and approximate lines of best fit. Use lines of best fit to draw conclusions about data.

Minnesota K–12 Academic Standards in Mathematics

Aligned Components of *Eureka Math*²

<p>8.4.1.1</p> <p>Collect, display and interpret data using scatterplots. Use the shape of the scatterplot to informally estimate a line of best fit and determine an equation for the line. Use appropriate titles, labels and units. Know how to use graphing technology to display scatterplots and corresponding lines of best fit.</p>	<p>7–8 M6 Topic E: Bivariate Numerical Data</p> <p><i>Supplemental material is necessary to address using graphing technology to display scatterplots and corresponding lines of best fit.</i></p>
<p>8.4.1.2</p> <p>Use a line of best fit to make statements about approximate rate of change and to make predictions about values not in the original data set.</p>	<p>7–8 M6 Lesson 20: Informally Fitting a Line to Data</p> <p>7–8 M6 Lesson 21: Linear Models</p>

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<p>8.4.1.3</p> <p>Assess the reasonableness of predictions using scatterplots by interpreting them in the original context.</p>	<p>7–8 M6 Lesson 20: Informally Fitting a Line to Data</p> <p>7–8 M6 Lesson 21: Linear Models</p>
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