Grade 7 | Arkansas Mathematics 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 <u>greatminds.org/state-studies</u>.

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 <u>greatminds.org/</u><u>math/curriculum</u>.

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

Standards for Mathematical Practice	Aligned Components of Eureka Math
MP.1 Make sense of problems and persevere in solving them. MP.2	Lessons in every module engage students in mathematical practices. These are designated in the Module Overview and labeled in lessons. For example:
Reason abstractly and quantitatively.	A STORY OF RATIOS Lesson 13 7•3
MP.3 Construct viable arguments and critique the reasoning of others.	 Questions leading to finding a solution: What is a solution set of an inequality? a solution set contains more than one number that makes the inequality a true statement.
MP.4 Model with mathematics.	 is -3 a solution to our inequality in part (a)? Yes. When the value of -3 is substituted into the inequality, the resulting statement is true. Could -4 be a solution to our inequality in part (a)?
MP.5 Use appropriate tools strategically.	 MP.2 The minimum value is the smallest value that makes the inequality true3 is not the minimum value because there are rational numbers that are smaller than -3 but greater than -4. For example, -3¹/₂ is smaller than -3 but still creates a true statement. How is solving an inequality similar to solving an equation? How is it different? Solving an equation and an inequality are similar in the sequencing of steps taken to solve for the
MP.6 Attend to precision.	 They are different because in an equation, you get one solution, but in an inequality, there are an infinite number of solutions.
MP.7	
Look for and make use of structure.	
MP.8	
Look for and express regularity in repeated reasoning.	

Number Concepts & Computations

Rational Numbers

Students model and compute with rational numbers.

Arkansas Mathematics Standards	Aligned Components of Eureka Math
7.NCC.1	G7 M2 Lesson 1: Opposite Quantities Combine to Make Zero
Represent addition and subtraction of rational numbers in real-world contexts using a variety of forms.	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
7.NCC.2	G7 M2 Lesson 1: Opposite Quantities Combine to Make Zero
Model and describe additive inverse	G7 M2 Lesson 2: Using the Number Line to Model the Addition of Integers
in real-world situations to show opposite	G7 M2 Lesson 3: Understanding Addition of Integers
quantities combine to make 0.	G7 M2 Lesson 4: Efficiently Adding Integers and Other Rational Numbers
	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
7.NCC.3	G7 M2 Lesson 5: Understanding Subtraction of Integers and Other Rational Numbers
Demonstrate in real-world contexts the	G7 M2 Lesson 6: The Distance Between Two Rational Numbers
distance between two rational numbers on the number line as the absolute value of their differences.	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
7.NCC.4	G7 M2 Lesson 13: Converting Between Fractions and Decimals Using Equivalent Fractions
Convert a rational number in fraction form to decimal form and recognize that the decimal form of a rational number terminates in 0s or eventually repeats.	G7 M2 Lesson 14: Converting Rational Numbers to Decimals Using Long Division

Arkansas Mathematics Standards	Aligned Components of Eureka Math
7.NCC.5	G7 M2 Lesson 10: Understanding Multiplication of Integers
Interpret the products and quotients of rational numbers by describing real-world contexts.	G7 M2 Lesson 11: Develop Rules for Multiplying Signed Numbers
	G7 M2 Lesson 12: Division of Integers
	G7 M2 Lesson 15: Multiplication and Division of Rational Numbers

Number Concepts & Computations

Rational Number Operations

Students apply all properties and operations to all rational numbers.

Arkansas Mathematics Standards	Aligned Components of Eureka Math
7.NCC.6	G7 M2 Lesson 8: Applying the Properties of Operations to Add and Subtract Rational Numbers
Apply properties of operations as strategies to fluently add, subtract, multiply, and divide rational numbers.	G7 M2 Lesson 9: Applying the Properties of Operations to Add and Subtract Rational Numbers
	G7 M2 Lesson 16: Applying the Properties of Operations to Multiply and Divide Rational Numbers
7.NCC.7	G7 M3 Lesson 7: Understanding Equations
Use addition and subtraction with	G7 M3 Lesson 8: Using If-Then Moves in Solving Equations
rational numbers in any form to solve	G7 M3 Lesson 9: Using If-Then Moves in Solving Equations
mathematical contexts.	G7 M3 Lesson 10: Angle Problems and Solving Equations
	G7 M3 Lesson 11: Angle Problems and Solving Equations
	G7 M3 Lesson 13: Inequalities
	G7 M3 Lesson 14: Solving Inequalities
	G7 M3 Lesson 15: Graphing Solutions to Inequalities
	G7 M4 Lesson 7: Markup and Markdown Problems
	G7 M4 Lesson 8: Percent Error Problems
	G7 M4 Lesson 9: Problem Solving When the Percent Changes
	G7 M4 Topic D: Population, Mixture, and Counting Problems Involving Percents

Arkansas Mathematics Standards	Aligned Components of Eureka Math
7.NCC.8	G7 M3 Lesson 7: Understanding Equations
Use multiplication and division with rational numbers in any form to solve multi-step problems in real-world and mathematical contexts.	G7 M3 Lesson 8: Using If-Then Moves in Solving Equations
	G7 M3 Lesson 9: Using If-Then Moves in Solving Equations
	G7 M3 Lesson 10: Angle Problems and Solving Equations
	G7 M3 Lesson 11: Angle Problems and Solving Equations
	G7 M3 Lesson 13: Inequalities
	G7 M3 Lesson 14: Solving Inequalities
	G7 M3 Lesson 15: Graphing Solutions to Inequalities
	G7 M4 Lesson 7: Markup and Markdown Problems
	G7 M4 Lesson 8: Percent Error Problems
	G7 M4 Lesson 9: Problem Solving When the Percent Changes
	G7 M4 Topic D: Population, Mixture, and Counting Problems Involving Percents
7.NCC.9	G6 M4 Topic A: Relationships of the Operations
Apply operations with rational numbers involving the order of operations, involving nested grouping symbols.	G6 M4 Lesson 9: Writing Addition and Subtraction Expressions
	G6 M4 Lesson 11: Factoring Expressions
	G6 M4 Lesson 12: Distributing Expressions

Proportional Relationships

Ratio & Rates

Students analyze and use unit rates to solve problems.

Aligned Components of <i>Eureka Math</i>
G7 M1 Topic B: Unit Rate and Constant of Proportionality
G7 M1 Lesson 11: Ratios of Fractions and Their Unit Rates
G7 M1 Lesson 12: Ratios of Fractions and Their Unit Rates
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 12: The Scale Factor as a Percent for a Scale Drawing
G7 M1 Topic C: Ratios and Rates Involving Fractions
G7 M1 Lesson 14: Multi-Step Ratio Problems
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 D: Population, Mixture, and Counting Problems Involving Percents

Proportional Relationships

Constant of Proportionality

Students analyze proportional relationships and solve multi-step ratio and percent problems.

Arkansas Mathematics Standards	Aligned Components of Eureka Math
7.PR.4	G7 M1 Topic A: Proportional Relationships
Determine whether two quantities represent proportional relationships by using equivalent ratios in a table and by graphing on a coordinate plane.	
7.PR.5	G7 M1 Topic A: Proportional Relationships
Compare two different proportional relationships represented in different forms.	
7.PR.6	G7 M1 Lesson 2: Proportional Relationships
Create equations in the form	G7 M1 Lesson 8: Representing Proportional Relationships with Equations
of <i>y</i> = <i>mx</i> from tables, verbal descriptions, or graphs.	G7 M1 Lesson 9: Representing Proportional Relationships with Equations
	G7 M1 Lesson 10: Interpreting Graphs of Proportional Relationships
	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

Arkansas Mathematics Standards

Aligned Components of Eureka Math

7.PR.7	G7 M1 Lesson 10: Interpreting Graphs of Proportional Relationships
Given a graph with a proportional relationship, explain the meaning of a point (x, y) on the graph, including the origin $(0, 0)$ and the unit rate $(1, r)$.	

Algebra

Expressions

Students apply properties of operations to create equivalent expressions.

Arkansas Mathematics Standards	Aligned Components of Eureka Math
7.ALG.1	G7 M3 Topic A: Use Properties of Operations to Generate Equivalent Expressions
Generate and justify equivalent expressions, using properties of operations to add, subtract, factor, and expand linear expressions with rational coefficients within mathematical and real-world problems.	

Algebra

Equations & Inequalities

Students apply previous knowledge of equations and inequalities to two-step problems.

Arkansas Mathematics Standards	Aligned Components of Eureka Math
7.ALG.2	G7 M2 Lesson 17: Comparing Tape Diagram Solutions to Algebraic Solutions
Model and solve fluently two-step equations in real-world or mathematical problems.	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 Lesson 7: Understanding Equations
	G7 M3 Lesson 8: Using If-Then Moves in Solving Equations
	G7 M3 Lesson 9: Using If-Then Moves in Solving Equations
	G7 M3 Lesson 10: Angle Problems and Solving Equations
	G7 M3 Lesson 11: Angle Problems and Solving Equations
	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
7.ALG.3	G7 M3 Lesson 12: Properties of Inequalities
Create, solve, and graph two-step inequalities in real-world and	G7 M3 Lesson 13: Inequalities
	G7 M3 Lesson 14: Solving Inequalities
$px \pm q > r, px \pm q < r, px \pm q \ge r,$ and $px \pm q \le r$.	G7 M3 Lesson 15: Graphing Solutions to Inequalities

Algebra

Relationships between Quantities

Students use understanding of algebraic expressions and equations to represent relationships between two quantities.

Arkansas Mathematics Standards	Aligned Components of Eureka Math
7.ALG.4 Write an equation to express two quantities in terms of the dependent and independent variables.	G6 M4 Lesson 31: Problems in Mathematical Terms G6 M4 Lesson 32: Multi-Step Problems in the Real World
7.ALG.5 Describe the relationship between the dependent and independent variables in an equation using tables and graphs, relating these to the equation.	G6 M4 Lesson 31: Problems in Mathematical Terms G6 M4 Lesson 32: Multi-Step Problems in the Real World

Geometry & Measurement

Area, Volume, & Surface Area Students solve problems involving area, volume, and surface area.

Arkansas Mathematics Standards	Aligned Components of Eureka Math
7.GM.1	G7 M3 Lesson 16: The Most Famous Ratio of All
Describe the proportional relationship between the circumference and diameter of a circle.	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

Arkansas Mathematics Standards	Aligned Components of Eureka Math
7.GM.2	G7 M3 Lesson 16: The Most Famous Ratio of All
Use area and circumference formulas	G7 M3 Lesson 17: The Area of a Circle
of a circle to solve real-world and	G7 M3 Lesson 18: More Problems on Area and Circumference
mathematical problems.	G7 M3 Lesson 20: Composite Area Problems
7.GM.3	G7 M3 Lesson 19: Unknown Area Problems on the Coordinate Plane
Apply the formulas for the volume and surface area of right rectangular prisms, rectangular pyramids, triangular prisms, and triangular pyramids to solve real- world and mathematical problems.	G7 M3 Lesson 20: Composite Area Problems
	G7 M3 Lesson 21: Surface Area
	G7 M3 Lesson 22: Surface Area
	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 D: Problems Involving Area and Surface Area
	G7 M6 Topic E: Problems Involving Volume

Geometry & Measurement

Cross Sections

Students describe cross sections of three-dimensional figures.

Arkansas Mathematics Standards

Aligned Components of Eureka Math

7.GM.4	G7 M6 Topic C: Slicing Solids
Describe the two-dimensional figure that results from slicing a three-dimensional figure parallel and perpendicular to the base.	

Geometry & Measurement

Triangles & Angles

Students solve problems using various angle properties of lines.

Arkansas Mathematics Standards

Aligned Components of Eureka Math

7.GM.5	G7 M3 Lesson 10: Angle Problems and Solving Equations
Solve multi-step problems involving supplementary, complementary, vertical, and adjacent angles to include solving for an unknown angle in a figure.	G7 M3 Lesson 11: Angle Problems and Solving Equations G7 M6 Topic A: Unknown Angles

Geometry & Measurement

Scale Students understand and use scale factor.

Aligned Components of Eureka Math
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 Topic C: Scale Drawings

Statistics & Probability

Numerical Data Students interpret and organize data.

Arkansas Mathematics Standards

Aligned Components of Eureka Math

7.SP.1	G6 M6 Lesson 2: Displaying a Data Distribution
Interpret data displayed in a histogram and box plot to answer questions	G6 M6 Lesson 3: Creating a Dot Plot
	G6 M6 Lesson 4: Creating a Histogram
about the data.	G6 M6 Lesson 5: Describing a Distribution Displayed in a Histogram
	G6 M6 Lesson 6: Describing the Center of a Distribution Using the Mean
	G6 M6 Lesson 7: The Mean as a Balance Point
	G6 M6 Lesson 8: Variability in a Data Distribution
	G6 M6 Lesson 10: Describing Distributions Using the Mean and MAD
	G6 M6 Lesson 11: Describing Distributions Using the Mean and MAD
	G6 M6 Lesson 14: Summarizing a Distribution Using a Box Plot
	G6 M6 Lesson 15: More Practice with Box Plots
	G6 M6 Lesson 16: Understanding Box Plots
	G6 M6 Lesson 17: Developing a Statistical Project
	G6 M6 Lesson 18: Connecting Graphical Representations and Numerical Summaries
	G6 M6 Lesson 20: Describing Center, Variability, and Shape of a Data Distribution from a Graphic Representation
	G6 M6 Lesson 21: Summarizing a Data Distribution by Describing Center, Variability, and Shape
	G6 M6 Lesson 22: Presenting a Summary of a Statistical Project
7.SP.2	Supplemental material is necessary to address this standard.
Recognize, create, and interpret categorical data in a circle graph.	

Arkansas Mathematics Standards

Aligned Components of Eureka Math

7.SP.3 Graph two numerical data sets and compare their variability.	G7 M5 Topic D: Comparing Populations
7.SP.4 Select an appropriate measure(s) of center or variability and draw valid comparative inferences for two data sets.	G7 M5 Topic D: Comparing Populations

Statistics & Probability

Sampling & Population Students understand sampling and use samples to make inferences.

Arkansas Mathematics Standards	Aligned Components of Eureka Math
7.SP.5	G7 M5 Lesson 13: Populations, Samples, and Generalizing from a Sample to a Population
Distinguish between a random and non-random sample.	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.SP.6	G7 M5 Lesson 14: Selecting a Sample
Use a random sampling of a population to draw valid inferences and generalizations of populations.	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

Statistics & Probability

Probability

Students understand theoretical and experimental probability for simple experiments.

Arkansas Mathematics Standards	Aligned Components of Eureka Math
7.SP.7	G7 M5 Lesson 2: Estimating Probabilities by Collecting Data
Determine the sample space of a simple experiment and use the sample space to determine the theoretical probability of a given set of outcomes.	G7 M5 Lesson 3: Chance Experiments with Equally Likely Outcomes
	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 12: Applying Probability to Make Informed Decisions
7.SP.8	G7 M5 Lesson 1: Chance Experiments
Recognize that probabilities in a simple experiment can be qualitative descriptors of likelihood: impossible (0), unlikely, neither likely nor unlikely, likely, or certain (1).	
7.SP.9	G7 M5 Lesson 1: Chance Experiments
Determine experimental probabilities in simple experiments and represent as fractions, decimals, and percents.	G7 M5 Lesson 2: Estimating Probabilities by Collecting Data
	G7 M5 Lesson 3: Chance Experiments with Equally Likely Outcomes
	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 12: Applying Probability to Make Informed Decisions

Arkansas Mathematics Standards	Aligned Components of Eureka Math
7.SP.10	G7 M5 Lesson 2: Estimating Probabilities by Collecting Data
Use theoretical probability of an event	G7 M5 Lesson 3: Chance Experiments with Equally Likely Outcomes
in a simple experiment to predict the number of times that an event will occur for a large number of experiments.	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 12: Applying Probability to Make Informed Decisions