Grade 7 | New York State Next Generation Mathematics Learning Standards Correlation to *Eureka Math²® New York Next Gen*

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 Math²® New York Next Gen,* 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 Math² New York Next Gen* 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 Math² New York Next Gen 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 Math² New York Next Gen 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 Math² New York Next Gen* 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 Math² New York Next Gen* 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.

Standards for Mathematical Practice	Aligned Components
MP.1 Make sense of problems and persevere in solving them.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.2 Reason abstractly and quantitatively.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.3 Construct viable arguments and critique the reasoning of others.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.4 Model with mathematics.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.5 Use appropriate tools strategically.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.6 Attend to precision.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.7 Look for and make use of structure.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.8 Look for and express regularity in repeated reasoning.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.

Ratios and Proportional Relationships

Analyze proportional relationships and use them to solve real-world and mathematical problems.

New York Next Generation Mathematics Learning Standards	Aligned Components
NY-7.RP.1 Compute unit rates associated with ratios of fractions.	7 M1 Lesson 1: An Experiment with Ratios and Rates 7 M1 Lesson 2: Exploring Tables of Proportional Relationships 7 M1 Lesson 3: Identifying Proportional Relationships in Tables
NY-7.RP.2 Recognize and represent proportional relationships between quantities.	*Supplemental material is necessary to address this standard.*
NY-7.RP.2a Decide whether two quantities are in a proportional relationship.	7 M1 Topic A: Understanding Proportional Relationships 7 M1 Lesson 14: Extreme Bicycles
NY-7.RP.2b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	7 M1 Lesson 4: Exploring Graphs of Proportional Relationships 7 M1 Lesson 5: Analyzing Graphs of Proportional Relationships 7 M1 Lesson 6: Identifying Proportional Relationships in Written Descriptions 7 M1 Lesson 8: Relating Representations of Proportional Relationships 7 M1 Lesson 9: Comparing Proportional Relationships 7 M1 Lesson 11: Constant Rates 7 M1 Lesson 12: Multi-Step Ratio Problems, Part 1 7 M1 Lesson 13: Multi-Step Ratio Problems, Part 2 7 M1 Lesson 16: Using a Scale Factor 7 M1 Lesson 18: Relating Areas of Scale Drawings

New York Next Generation Mathematics Learning Standards	Aligned Components
NY-7.RP.2c Represent a proportional relationship using an equation.	7 M1 Lesson 2: Exploring Tables of Proportional Relationships 7 M1 Lesson 3: Identifying Proportional Relationships in Tables 7 M1 Lesson 8: Relating Representations of Proportional Relationships 7 M1 Lesson 10: Applying Proportional Reasoning 7 M1 Lesson 11: Constant Rates 7 M1 Lesson 12: Multi-Step Ratio Problems, Part 1 7 M1 Lesson 13: Multi-Step Ratio Problems, Part 2 7 M4 Lesson 3: Proportion and Percent 7 M4 Lesson 4: Common Denominators or Common Numerators
NY-7.RP.2d 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 $(1, r)$ where r is the unit rate.	7 M1 Lesson 4: Exploring Graphs of Proportional Relationships 7 M1 Lesson 5: Analyzing Graphs of Proportional Relationships 7 M1 Lesson 9: Comparing Proportional Relationships
NY-7.RP.3 Use proportional relationships to solve multistep ratio and percent problems.	7 M1 Lesson 7: Handstand Sprint 7 M1 Lesson 10: Applying Proportional Reasoning 7 M1 Lesson 11: Constant Rates 7 M1 Lesson 12: Multi-Step Ratio Problems, Part 1 7 M1 Lesson 13: Multi-Step Ratio Problems, Part 2 7 M4 Topic A: Proportion and Percent 7 M4 Topic B: Part of 100 7 M4 Lesson 9: Percent Increase

New York Next Generation Mathematics Learning Standards	Aligned Components
NY-7.RP.3 *continued*	7 M4 Lesson 10: Percent Decrease
	7 M4 Lesson 11: More Discounts
	7 M4 Lesson 12: What Is the Best Deal?
	7 M4 Topic D: Applications of Percent
	7 M4 Lesson 19: Making Money, Day 1
	7 M4 Lesson 20: Making Money, Day 2
	7 M4 Lesson 21: Making Mixtures
	7 M4 Lesson 22: Percents of Percents

The Number System

Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

New York Next Generation Mathematics Learning Standards	Aligned Components
NY-7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers. Represent addition and subtraction on a horizontal or vertical number line.	*Supplemental material is necessary to address this standard.*
NY-7.NS.1a Describe situations in which opposite quantities combine to make 0.	7 M2 Lesson 1: Combining Opposites 7 M2 Lesson 12: The Integer Game

New York Next Generation Mathematics Learning Standards	Aligned Components
NY-7.NS.1b Understand addition of rational numbers; $p + q$ is the number located a distance $\lvert q \rvert$ from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.	7 M2 Lesson 1: Combining Opposites 7 M2 Lesson 2: Adding Integers 7 M2 Lesson 3: Adding Integers Efficiently 7 M2 Lesson 5: Decomposing Rational Numbers to Make Addition More Efficient 7 M2 Lesson 6: Adding Rational Numbers 7 M2 Lesson 8: Subtracting Integers, Part 1
NY-7.NS.1c Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.	7 M2 Lesson 3: Adding Integers Efficiently 7 M2 Lesson 7: What Subtraction Means 7 M2 Lesson 8: Subtracting Integers, Part 1 7 M2 Lesson 9: Subtracting Integers, Part 2 7 M2 Lesson 10: Subtracting Rational Numbers, Part 1 7 M2 Lesson 11: Subtracting Rational Numbers, Part 2
NY-7.NS.1d Apply properties of operations as strategies to add and subtract rational numbers.	7 M2 Lesson 4: KAKOOMA® 7 M2 Lesson 5: Decomposing Rational Numbers to Make Addition More Efficient 7 M2 Lesson 6: Adding Rational Numbers 7 M2 Lesson 9: Subtracting Integers, Part 2 7 M2 Lesson 10: Subtracting Rational Numbers, Part 1 7 M2 Lesson 11: Subtracting Rational Numbers, Part 2 7 M2 Lesson 12: The Integer Game

New York Next Generation Mathematics Learning Standards	Aligned Components
NY-7.NS.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.	*Supplemental material is necessary to address this standard.*
NY-7.NS.2a Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.	7 M2 Topic C: Multiplying Rational Numbers 7 M2 Lesson 21: Comparing and Ordering Rational Numbers
NY-7.NS.2b Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-\left(\frac{p}{q}\right) = \frac{-p}{q} = \frac{p}{-q}$. Interpret quotients of rational numbers by describing real-world contexts.	7 M2 Lesson 14: Understanding the Product of Two Negative Numbers 7 M2 Lesson 18: Understanding Negative Divisors 7 M2 Lesson 21: Comparing and Ordering Rational Numbers

New York Next Generation Mathematics Learning Standards	Aligned Components
NY-7.NS.2c Apply properties of operations as strategies to multiply and divide rational numbers.	7 M2 Topic C: Multiplying Rational Numbers 7 M2 Lesson 17: Understanding Negative Dividends 7 M2 Lesson 18: Understanding Negative Divisors 7 M2 Lesson 22: Multiplication and Division Expressions 7 M2 Lesson 24: Order of Operations with Rational Numbers
NY-7.NS.2d Convert a fraction to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.	7 M2 Lesson 19: Rational Numbers as Decimals, Part 1 7 M2 Lesson 20: Rational Numbers as Decimals, Part 2 7 M2 Lesson 21: Comparing and Ordering Rational Numbers
NY-7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers.	7 M2 Lesson 25: Writing and Evaluating Expressions with Rational Numbers, Part 1 7 M2 Lesson 26: Writing and Evaluating Expressions with Rational Numbers, Part 2

Expressions, Equations, and Inequalities
Use properties of operations to generate equivalent expressions.

New York Next Generation Mathematics Learning Standards	Aligned Components
NY-7.EE.1 Add, subtract, factor, and expand linear expressions with rational coefficients by applying the properties of operations.	7 M3 Topic A: Equivalent Expressions
NY-7.EE.2 Understand that rewriting an expression in different forms in real-world and mathematical problems can reveal and explain how the quantities are related.	7 M3 Lesson 2: The Distributive Property and the Tabular Model 7 M3 Lesson 4: Adding and Subtracting Expressions 7 M3 Lesson 5: Factoring Expressions 7 M3 Lesson 6: Comparing Expressions 7 M3 Lesson 9: Solving Equations to Determine Unknown Angle Measures 7 M4 Lesson 9: Percent Increase 7 M4 Lesson 10: Percent Decrease 7 M4 Lesson 11: More Discounts 7 M4 Lesson 13: Scale Factor—Percent Increase and Decrease 7 M4 Lesson 14: Tips and Taxes 7 M4 Lesson 15: Markups and Discounts 7 M4 Lesson 22: Percents of Percents

Expressions, Equations, and Inequalities
Solve real-life and mathematical problems using numerical and algebraic expressions, equations, and inequalities.

New York Next Generation Mathematics Learning Standards	Aligned Components
NY-7.EE.3 Solve multi-step real-world and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate. Assess the reasonableness of answers using mental computation and estimation strategies.	7 M2 Lesson 25: Writing and Evaluating Expressions with Rational Numbers, Part 1 7 M2 Lesson 26: Writing and Evaluating Expressions with Rational Numbers, Part 2 7 M3 Lesson 9: Solving Equations to Determine Unknown Angle Measures 7 M3 Lesson 10: Problem Solving with Unknown Angle Measures 7 M3 Lesson 11: Dominoes and Dominoes 7 M3 Lesson 16: Using Equations to Solve Rate Problems 7 M3 Lesson 17: Using Equations to Solve Problems
NY-7.EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.	7 M3 Lesson 11: Dominoes and Dominoes 7 M3 Lesson 12: Solving Problems Algebraically and Arithmetically 7 M3 Lesson 13: Solving Equations—Puzzles 7 M3 Lesson 16: Using Equations to Solve Rate Problems 7 M3 Lesson 17: Using Equations to Solve Problems 7 M3 Lesson 18: Understanding Inequalities and Their Solutions 7 M3 Lesson 21: Solving Two-Step Inequalities 7 M3 Lesson 22: Solving Problems Involving Inequalities 7 M3 Lesson 23: Inequalities vs. Equations

New York Next Generation Mathematics Learning Standards	**Aligned Components**
NY-7.EE.4a Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.	7 M3 Lesson 7: Angle Relationships and Unknown Angle Measures 7 M3 Lesson 8: Strategies to Determine Unknown Angle Measures 7 M3 Lesson 12: Solving Problems Algebraically and Arithmetically 7 M3 Lesson 13: Solving Equations—Puzzles 7 M3 Lesson 14: Solving Equations—Scavenger Hunt 7 M3 Lesson 15: Solving Equations Fluently 7 M3 Lesson 16: Using Equations to Solve Rate Problems
NY-7.EE.4b Solve word problems leading to inequalities of the form $px + q > r$, $px + q \geq r$, $px + q \leq r$, or $px + q < r$, where p, q, and r are rational numbers. Graph the solution set of the inequality on the number line and interpret it in the context of the problem.	7 M3 Topic D: Inequalities

Geometry

Draw, construct, and describe geometrical figures and describe the relationships between them.

New York Next Generation Mathematics Learning Standards	Aligned Components
NY-7.G.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	7 M1 Lesson 15: Scale Drawings 7 M1 Lesson 16: Using a Scale Factor 7 M1 Lesson 17: Finding Actual Distances from a Scale Drawing 7 M1 Lesson 18: Relating Areas of Scale Drawings 7 M1 Lesson 19: Scale and Scale Factor 7 M1 Lesson 20: Creating Multiple Scale Drawings 7 M4 Lesson 13: Scale Factor—Percent Increase and Decrease
NY-7.G.2 Draw triangles when given measures of angles and/or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	7 M6 Lesson 1: Sketching, Drawing, and Constructing Geometric Figures 7 M6 Lesson 2: Constructing Parallelograms and Other Quadrilaterals 7 M6 Lesson 3: Side Lengths of a Triangle 7 M6 Lesson 4: Angles of a Triangle 7 M6 Lesson 5: Constructing Quadrilaterals and Triangles 7 M6 Lesson 6: Unique Triangles 7 M6 Lesson 7: Two Angles and One Side 7 M6 Lesson 8: Two Sides and One Angle
NY-7.G.3 Describe the two-dimensional shapes that result from slicing three-dimensional solids parallel or perpendicular to the base.	7 M6 Lesson 22: Understanding Planes and Cross Sections 7 M6 Lesson 23: Cross Section Scavenger Hunt

Geometry

Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

New York Next Generation Mathematics Learning Standards	Aligned Components
NY-7.G.4 Apply the formulas for the area and circumference of a circle to solve problems.	7 M6 Lesson 9: Constructing a Circle 7 M6 Lesson 10: The Outside of a Circle 7 M6 Lesson 11: The Inside of a Circle 7 M6 Lesson 12: Exploring the Area and Circumference of a Circle 7 M6 Lesson 13: Finding Areas of Circular Regions 7 M6 Lesson 14: Composite Figures with Circular Regions 7 M6 Lesson 15: Watering a Lawn
NY-7.G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.	7 M3 Lesson 7: Angle Relationships and Unknown Angle Measures 7 M3 Lesson 8: Strategies to Determine Unknown Angle Measures 7 M3 Lesson 10: Problem Solving with Unknown Angle Measures
NY-7.G.6 Solve real-world and mathematical problems involving area of two-dimensional objects composed of triangles and trapezoids. Solve surface area problems involving right prisms and right pyramids composed of triangles and trapezoids. Find the volume of right triangular prisms, and solve volume problems involving three-dimensional objects composed of right rectangular prisms.	7 M6 Lesson 14: Composite Figures with Circular Regions 7 M6 Lesson 16: Solving Area Problems by Composition and Decomposition 7 M6 Lesson 17: Surface Area of Right Rectangular and Right Triangular Prisms 7 M6 Lesson 18: Surface Area of Right Prisms 7 M6 Lesson 19: Surface Area of Cylinders 7 M6 Lesson 20: Surface Area of Right Pyramids 7 M6 Lesson 21: Surface Area of Other Solids 7 M6 Lesson 24: Volume of Prisms 7 M6 Lesson 25: Volume of Composite Solids 7 M6 Lesson 26: Designing a Fish Tank

Statistics and Probability

Draw informal comparative inferences about two populations.

New York Next Generation Mathematics Learning Standards	Aligned Components
NY-7.SP.1 Construct and interpret box-plots, find the interquartile range, and determine if a data point is an outlier.	7 M5 Topic B: Interquartile Range and Box Plots 7 M5 Lesson 8: Interpreting Box Plots
NY-7.SP.3 Informally assess the degree of visual overlap of two quantitative data distributions.	7 M5 Lesson 9: Comparing Samples 7 M5 Lesson 10: Comparing Sample Means
NY-7.SP.4 Use measures of center and measures of variability for quantitative data from random samples or populations to draw informal comparative inferences about the populations.	7 M5 Lesson 5: Using the Interquartile Range to Describe Variability 7 M5 Lesson 7: More Practice with Box Plots 7 M5 Topic C: Drawing Conclusions from Data

Statistics and Probability

Investigate chance processes and develop, use, and evaluate probability models.

New York Next Generation Mathematics Learning Standards	Aligned Components
NY-7.SP.8 Find probabilities of compound events using organized lists, sample space tables, tree diagrams, and simulation.	7 M5 Lesson 1: Probability Revisited 7 M5 Lesson 2: Multistage Experiments
NY-7.SP.8a Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.	7 M5 Lesson 1: Probability Revisited 7 M5 Lesson 2: Multistage Experiments
NY-7.SP.8b Represent sample spaces for compound events using methods such as organized lists, sample space tables, and tree diagrams. For an event described in everyday language, identify the outcomes in the sample space which compose the event.	7 M5 Lesson 1: Probability Revisited 7 M5 Lesson 2: Multistage Experiments
NY-7.SP.8c Design and use a simulation to generate frequencies for compound events.	7 M5 Lesson 3: Probability Simulations 7 M5 Lesson 4: Simulations with Random Number Tables