
Grade 6 | Indiana Academic Standards for Mathematics Correlation to *Eureka Math*²TM

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*²TM, 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.

Process Standards for Mathematics

Aligned Components of *Eureka Math*²

PS.1: Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway, rather than simply jumping into a solution attempt. They consider analogous problems and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” and “Is my answer reasonable?” They understand the approaches of others to solving complex problems and identify correspondences between different approaches. Mathematically proficient students understand how mathematical ideas interconnect and build on one another to produce a coherent whole.

While lessons in every module engage students in making sense of problems and persevering in solving them, this mathematical practice is specifically addressed in the following modules:

6 M1: Ratios, Rates, and Percents

6 M2: Operations with Fractions and Multi-Digit Numbers

PS.2: Reason abstractly and quantitatively.

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

While lessons in every module engage students in reasoning abstractly and quantitatively, this mathematical practice is specifically addressed in the following modules:

6 M1: Ratios, Rates, and Percents

6 M4: Expressions and One-Step Equations

6 M6: Statistics

Process Standards for Mathematics**Aligned Components of *Eureka Math*²****PS.3: Construct viable arguments and critique the reasoning of others.**

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They analyze situations by breaking them into cases and recognize and use counterexamples. They organize their mathematical thinking, justify their conclusions and communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. They justify whether a given statement is true always, sometimes, or never. Mathematically proficient students participate and collaborate in a mathematics community. They listen to or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

While lessons in every module engage students in constructing viable arguments and critiquing the reasoning of others, this mathematical practice is specifically addressed in the following modules:

6 M3: Rational Numbers

6 M5: Area, Surface Area, and Volume

Process Standards for Mathematics**Aligned Components of *Eureka Math*²****PS.4: Model with mathematics.**

Mathematically proficient students apply the mathematics they know to solve problems arising in everyday life, society, and the workplace using a variety of appropriate strategies. They create and use a variety of representations to solve problems and to organize and communicate mathematical ideas. Mathematically proficient students apply what they know and are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

While lessons in every module engage students in modeling with mathematics, this mathematical practice is specifically addressed in the following modules:

6 M5: Area, Surface Area, and Volume

6 M6: Statistics

PS.5: Use appropriate tools strategically.

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Mathematically proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. Mathematically proficient students identify relevant external mathematical resources, such as digital content, and use them to pose or solve problems. They use technological tools to explore and deepen their understanding of concepts and to support the development of learning mathematics. They use technology to contribute to concept development, simulation, representation, reasoning, communication and problem solving.

While lessons in every module engage students in using appropriate tools strategically, this mathematical practice is specifically addressed in the following modules:

6 M4: Expressions and One-Step Equations

6 M6: Statistics

Process Standards for Mathematics

Aligned Components of *Eureka Math*²

<p>PS.6: Attend to precision.</p> <p>Mathematically proficient students communicate precisely to others. They use clear definitions, including correct mathematical language, in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They express solutions clearly and logically by using the appropriate mathematical terms and notation. They specify units of measure and label axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently and check the validity of their results in the context of the problem. They express numerical answers with a degree of precision appropriate for the problem context.</p>	<p>While lessons in every module engage students in attending to precision, this mathematical practice is specifically addressed in the following modules:</p> <ul style="list-style-type: none"> 6 M2: Operations with Fractions and Multi-Digit Numbers 6 M4: Expressions and One-Step Equations 6 M6: Statistics
<p>PS.7: Look for and make use of structure.</p> <p>Mathematically proficient students look closely to discern a pattern or structure. They step back for an overview and shift perspective. They recognize and use properties of operations and equality. They organize and classify geometric shapes based on their attributes. They see expressions, equations, and geometric figures as single objects or as being composed of several objects.</p>	<p>While lessons in every module engage students in looking for and making use of structure, this mathematical practice is specifically addressed in the following modules:</p> <ul style="list-style-type: none"> 6 M1: Ratios, Rates, and Percents 6 M2: Operations with Fractions and Multi-Digit Numbers 6 M4: Expressions and One-Step Equations 6 M5: Area, Surface Area, and Volume 6 M6: Statistics
<p>PS.8: Look for and express regularity in repeated reasoning.</p> <p>Mathematically proficient students notice if calculations are repeated and look for general methods and shortcuts. They notice regularity in mathematical problems and their work to create a rule or formula. Mathematically proficient students maintain oversight of the process, while attending to the details as they solve a problem. They continually evaluate the reasonableness of their intermediate results.</p>	<p>While lessons in every module engage students in looking for and expressing regularity in repeated reasoning, this mathematical practice is specifically addressed in the following modules:</p> <ul style="list-style-type: none"> 6 M1: Ratios, Rates, and Percents 6 M2: Operations with Fractions and Multi-Digit Numbers 6 M3: Rational Numbers 6 M5: Area, Surface Area, and Volume

Strands	Indiana Academic Standards for Mathematics	Aligned Components of <i>Eureka Math</i> ²
Number Sense	<p>6.NS.1</p> <p>Understand that positive and negative numbers are used to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge). Use positive and negative numbers to represent and compare quantities in real-world contexts, explaining the meaning of 0 in each situation.</p>	<p>6 M3 Lesson 1: Positive and Negative Numbers</p> <p>6 M3 Lesson 4: Rational Numbers in Real-World Situations</p> <p>6 M3 Topic B: Ordering and Magnitude</p>
	<p>6.NS.2</p> <p>Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself (e.g., $-(-3) = 3$), and that 0 is its own opposite.</p>	<p>6 M3 Topic A: Integers and Rational Numbers</p>
	<p>6.NS.3</p> <p>Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts.</p>	<p>6 M3 Topic A: Integers and Rational Numbers</p> <p>6 M3 Lesson 5: Comparing Rational Numbers</p> <p>6 M3 Lesson 6: Ordering Rational Numbers</p>
	<p>6.NS.4</p> <p>Understand that the absolute value of a number is the distance from zero on a number line. Find the absolute value of real numbers and know that the distance between two numbers on the number line is the absolute value of their difference. Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.</p>	<p>6 M3 Topic B: Ordering and Magnitude</p>

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	<p>6.NS.5</p> <p>Know commonly used fractions (halves, thirds, fourths, fifths, eighths, tenths) and their decimal and percent equivalents. Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator.</p>	6 M1 Topic E: Percents
	<p>6.NS.6</p> <p>Identify and explain prime and composite numbers.</p>	<p>4 M2 Lesson 21: Find factor pairs for numbers up to 100 and use factors to identify numbers as prime or composite.</p> <p>6 M2 Topic A: Factors, Multiples, and Divisibility</p>
	<p>6.NS.7</p> <p>Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers from 1 to 100, with a common factor as a multiple of a sum of two whole numbers with no common factor.</p>	<p>6 M2 Topic A: Factors, Multiples, and Divisibility</p> <p>6 M4 Lesson 13: The Distributive Property</p> <p>6 M4 Lesson 14: Using the Distributive Property to Factor Expressions</p>
	<p>6.NS.8</p> <p>Interpret, model, and use ratios to show the relative sizes of two quantities. Describe how a ratio shows the relationship between two quantities. Use the following notations: $\frac{a}{b}$, a to b, $a:b$.</p>	<p>6 M1 Topic A: Ratios</p> <p>6 M1 Topic B: Collections of Equivalent Ratios</p> <p>6 M1 Lesson 15: The Value of the Ratio</p>
	<p>6.NS.9</p> <p>Understand the concept of a unit rate and use terms related to rate in the context of a ratio relationship.</p>	6 M1 Topic D: Rates

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	<p>6.NS.10</p> <p>Use reasoning involving rates and ratios to model real-world and other mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations).</p>	<p>6 M1: Ratios, Rates, and Percents</p> <p>6 M4 Lesson 22: Relationship Between Two Variables</p> <p>6 M4 Lesson 23: Graphs of Ratio Relationships</p> <p>6 M5 Lesson 8: Areas of Composite Figures in Real-World Situations</p> <p>6 M5 Lesson 13: Surface Area in Real-World Situations</p>
Computation	<p>6.C.1</p> <p>Divide multi-digit whole numbers fluently using a standard algorithmic approach.</p>	<p>6 M2 Topic E: Division of Multi-Digit Numbers</p>
	<p>6.C.2</p> <p>Compute with positive fractions and positive decimals fluently using a standard algorithmic approach.</p>	<p>6 M2 Topic D: Decimal Addition, Subtraction, and Multiplication</p> <p>6 M2 Topic F: Decimal Division</p>
	<p>6.C.3</p> <p>Solve real-world problems with positive fractions and decimals by using one or two operations.</p>	<p>6 M2 Lesson 12: Fraction Operations in a Real-World Situation</p> <p>6 M2 Lesson 16: Applications of Decimal Operations</p> <p>6 M2 Lesson 24: Living on Mars</p>
	<p>6.C.4</p> <p>Compute quotients of positive fractions and solve real-world problems involving division of fractions by fractions. Use a visual fraction model and/or equation to represent these calculations.</p>	<p>6 M2 Topic B: Dividing Fractions</p> <p>6 M2 Topic C: Dividing Fractions Fluently</p>
	<p>6.C.5</p> <p>Evaluate positive rational numbers with whole number exponents.</p>	<p>6 M4 Topic A: Numerical Expressions</p>

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	<p>6.C.6</p> <p>Apply the order of operations and properties of operations (identity, inverse, commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property) to evaluate numerical expressions with nonnegative rational numbers, including those using grouping symbols, such as parentheses, and involving whole number exponents.</p>	<p>6 M4 Topic A: Numerical Expressions</p> <p>6 M4 Lesson 13: The Distributive Property</p>
<p>Algebra and Functions</p>	<p>6.AF.1</p> <p>Evaluate expressions for specific values of their variables, including expressions with whole-number exponents and those that arise from formulas used in geometry and other real-world problems.</p>	<p>6 M4 Lesson 8: Algebraic Expressions with Addition, Subtraction, Multiplication, and Division</p> <p>6 M4 Lesson 11: Modeling Real-World Situations with Expressions</p> <p>6 M4 Lesson 12: Applying Properties to Multiplication and Division Expressions</p> <p>6 M4 Lesson 17: Equations and Solutions</p> <p>6 M5 Lesson 1: The Area of a Parallelogram</p> <p>6 M5 Lesson 3: The Area of a Triangle</p> <p>6 M5 Topic C: Nets and Surface Area</p> <p>6 M5 Lesson 16: Applying Volume Formulas</p>

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	<p>6.AF.2</p> <p>Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions and to justify whether two linear expressions are equivalent when the two expressions name the same number regardless of which value is substituted into them.</p>	<p>6 M4 Topic C: Equivalent Expressions Using the Properties of Operations</p> <p>6 M5 Lesson 4: Areas of Triangles in Real-World Situations</p> <p>6 M5 Lesson 6: Problem Solving with Area in the Coordinate Plane</p> <p>6 M5 Lesson 7: Areas of Trapezoids and Other Polygons</p> <p>6 M5 Lesson 12: From Nets to Surface Area</p> <p>6 M5 Lesson 17: Problem Solving with Volume</p>
	<p>6.AF.3</p> <p>Define and use multiple variables when writing expressions to represent real-world and other mathematical problems, and evaluate them for given values.</p>	<p>6 M4 Topic B: Expressions and Real-World Problems</p> <p>6 M4 Lesson 16: Equivalent Algebraic Expressions</p>
	<p>6.AF.4</p> <p>Understand that solving an equation or inequality is the process of answering the following question: Which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.</p>	<p>6 M4 Topic D: Equations and Inequalities</p>
	<p>6.AF.5</p> <p>Solve equations of the form $x + p = q$, $x - p = q$, $px = q$, and $\frac{x}{p} = q$ fluently for cases in which p, q and x are all nonnegative rational numbers. Represent real-world problems using equations of these forms and solve such problems.</p>	<p>6 M4 Topic D: Equations and Inequalities</p> <p>6 M5 Lesson 2: The Area of a Right Triangle</p>

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	<p>6.AF.6</p> <p>Write an inequality of the form $x > c$, $x \geq c$, $x < c$, or $x \leq c$, where c is a rational number, to represent a constraint or condition in a real-world or other mathematical problem. Recognize inequalities have infinitely many solutions and represent solutions on a number line diagram.</p>	<p>6 M4 Lesson 18: Inequalities and Solutions</p> <p>7 M3 Lesson 18: Understanding Inequalities and Their Solutions</p>
	<p>6.AF.7</p> <p>Understand that signs of numbers in ordered pairs indicate the quadrant containing the point. Identify rules or patterns in the signs as they relate to the quadrants. Graph points with rational number coordinates on a coordinate plane.</p>	<p>6 M3 Topic C: The Coordinate Plane</p>
	<p>6 AF.8</p> <p>Solve real-world and other mathematical problems by graphing points with rational number coordinates on a coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.</p>	<p>6 M3 Lesson 14: Modeling with the Coordinate Plane</p> <p>6 M3 Topic D: Solving Problems in the Coordinate Plane</p> <p>6 M5 Lesson 5: Perimeter and Area in the Coordinate Plane</p>
	<p>6.AF.9</p> <p>Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane.</p>	<p>6 M1 Topic B: Collections of Equivalent Ratios</p> <p>6 M4 Lesson 23: Graphs of Ratio Relationships</p>

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	<p>6.AF.10</p> <p>Use variables to represent two quantities in a proportional relationship in a real-world problem; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.</p>	6 M4 Topic E: Relating Variables by Using Tables, Graphs, and Equations
Geometry and Measurement	<p>6.GM.1</p> <p>Convert between measurement systems (English to metric and metric to English) given conversion factors, and use these conversions in solving real-world problems.</p>	6 M1 Topic D: Rates
	<p>6.GM.2</p> <p>Know that the sum of the interior angles of any triangle is 180° and that the sum of the interior angles of any quadrilateral is 360°. Use this information to solve real-world and mathematical problems.</p>	<p>5 M5 Lesson 1: Analyze hierarchies and identify properties of quadrilaterals.</p> <p>5 M5 Lesson 2: Classify trapezoids based on their properties.</p> <p>7 M4 Lesson 1: Sketching, Drawing, and Constructing Geometric Figures</p> <p>7 M4 Lesson 4: Angles of a Triangle</p>
	<p>6.GM.3</p> <p>Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate; apply these techniques to solve real-world and other mathematical problems.</p>	<p>6 M5 Lesson 5: Perimeter and Area in the Coordinate Plane</p> <p>6 M5 Lesson 6: Problem Solving with Area in the Coordinate Plane</p>

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	<p>6.GM.4</p> <p>Find the area of complex shapes composed of polygons by composing or decomposing into simple shapes; apply this technique to solve real-world and other mathematical problems.</p>	<p>6 M5 Topic A: Areas of Polygons</p> <p>6 M5 Topic B: Problem Solving with Area</p>
	<p>6.GM.5</p> <p>Find the volume of a right rectangular prism with fractional edge lengths using unit cubes of the appropriate unit fraction edge lengths (e.g., using technology or concrete materials), and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = Bh$ to find volumes of right rectangular prisms with fractional edge lengths to solve real-world and other mathematical problems.</p>	<p>6 M5 Topic D: Volumes of Right Rectangular Prisms</p>
	<p>6.GM.6</p> <p>Construct right rectangular prisms from nets and use the nets to compute the surface area of prisms; apply this technique to solve real-world and other mathematical problems.</p>	<p>6 M5 Topic C: Nets and Surface Area</p> <p>6 M5 Lesson 19: Volume and Surface Area in Real-World Situations</p>

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Data Analysis and Statistics	<p>6.DS.1</p> <p>Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for the variability in the answers. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.</p>	<p>6 M6 Topic A: Understanding Distributions</p> <p>6 M6 Lesson 9: Variability in a Data Distribution</p> <p>6 M6 Lesson 14: Using a Box Plot to Summarize a Distribution</p> <p>6 M6 Lesson 17: Developing a Statistical Project</p> <p>6 M6 Lesson 18: Connecting Graphical Representations and Summary Measures</p>
	<p>6.DS.2</p> <p>Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots.</p>	<p>6 M6 Topic A: Understanding Distributions</p> <p>6 M6 Topic C: Median, Interquartile Range, and Box Plots</p> <p>6 M6 Lesson 19: Comparing Data Distributions</p> <p>6 M6 Lesson 22: Presenting Statistical Projects</p>
	<p>6.DS.3</p> <p>Formulate statistical questions; collect and organize the data (e.g., using technology); display and interpret the data with graphical representations (e.g., using technology).</p>	<p>6 M6: Statistics</p>

Strands	Indiana Academic Standards for Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>Data Analysis</p>	<p>6.DS.4</p> <p>Summarize numerical data sets in relation to their context in multiple ways, such as:</p> <ul style="list-style-type: none"> a. report the number of observations b. describe the nature of the attribute under investigation, including how it was measured and its units of measurement c. determine quantitative measures of center (mean and/or median) and spread (range and interquartile range) d. describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered e. relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered. 	<p>6 M6: Statistics</p>