

## ABOUT *EUREKA MATH*

Created by the nonprofit Great Minds, *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

*Eureka Math* is the only curriculum found by EdReports.org to align fully with the Common Core State Standards for Mathematics for all grades, Kindergarten through Grade 8. Great Minds offers detailed analyses which demonstrate how each grade of *Eureka Math* aligns with specific state standards. Access these free alignment studies at [greatminds.org/state-studies](http://greatminds.org/state-studies).

## DATA

Schools and districts nationwide are experiencing student growth and impressive test scores after using *Eureka Math*. See their stories and data at [greatminds.org/data](http://greatminds.org/data).

## FULL SUITE OF RESOURCES

As a nonprofit, Great Minds offers the *Eureka Math* curriculum as PDF downloads for free, noncommercial use. Access the free PDFs at [greatminds.org/math/curriculum](http://greatminds.org/math/curriculum).

The teacher–writers who created the curriculum have also developed essential resources, available only from Great Minds, including the following:

- Printed material in English and Spanish
- Digital resources
- Professional development
- Classroom tools and manipulatives
- Teacher support materials
- Parent resources





# Texas Essential Knowledge and Skills for Mathematics Correlation to *Eureka Math*<sup>™</sup>

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## GRADE 8 MATHEMATICS

The majority of the Grade 8 Texas Essential Knowledge and Skills for Mathematics are fully covered by the Grade 8 *Eureka Math* curriculum. The areas where the Grade 8 Texas Essential Knowledge and Skills for Mathematics and Grade 8 *Eureka Math* do not align will require the use of *Eureka Math* content from other grade levels or courses, or supplemental materials. A detailed analysis of alignment is provided in the table below. With strategic placement of supplemental materials, *Eureka Math* can ensure students are successful in achieving the proficiencies of the Texas Essential Knowledge and Skills for Mathematics while still benefiting from the coherence and rigor of *Eureka Math*.

## INDICATORS

-  Green indicates that the Texas standard is fully addressed in *Eureka Math*.
-  Yellow indicates that the Texas standard may not be completely addressed in *Eureka Math*.
-  Red indicates that the Texas standard is not addressed in *Eureka Math*.
-  Blue indicates there is a discrepancy between the grade level at which this standard is addressed in the Texas standards and in *Eureka Math*.

**Mathematical Process Standards****Aligned Components of *Eureka Math***

<p>(1) The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p>	
<p>a. apply mathematics to problems arising in everyday life, society, and the workplace;</p>	<p>This process standard is analogous to the CCSSM Standards for Mathematical Practice 1, which is specifically addressed in the following modules:</p> <p>G8 M1: Integer Exponents and Scientific Notation</p> <p>G8 M4: Linear Equations</p>
<p>b. use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;</p>	<p>This process standard is analogous to the CCSSM Standards for Mathematical Practice 1, which is specifically addressed in the following modules:</p> <p>G8 M1: Integer Exponents and Scientific Notation</p> <p>G8 M4: Linear Equations</p>
<p>c. select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;</p>	<p>This process standard is analogous to the CCSSM Standards for Mathematical Practice 5, which is specifically addressed in the following modules:</p> <p>G8 M2: The Concept of Congruence</p> <p>G8 M3: Similarity</p>

## Mathematical Process Standards

## Aligned Components of *Eureka Math*

<p>d. communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;</p>	<p>This process standard is analogous to the CCSSM Standards for Mathematical Practice 4, which is specifically addressed in the following modules:</p> <p>G8 M3: Similarity</p> <p>G8 M4: Linear Equations</p> <p>G8 M6: Linear Functions</p>
<p>e. create and use representations to organize, record, and communicate mathematical ideas;</p>	<p>This process standard is analogous to the CCSSM Standards for Mathematical Practice 6, which is specifically addressed in the following modules:</p> <p>G8 M1: Integer Exponents and Scientific Notation</p> <p>G8 M2: The Concept of Congruence</p> <p>G8 M3: Similarity</p> <p>G8 M4: Linear Equations</p> <p>G8 M5: Examples of Functions from Geometry</p> <p>G8 M6: Linear Functions</p> <p>G8 M7: Introduction to Irrational Numbers Using Geometry</p>

## Mathematical Process Standards

## Aligned Components of *Eureka Math*

<p>f. analyze mathematical relationships to connect and communicate mathematical ideas; and</p>	<p>This process standard is analogous to the CCSSM Standards for Mathematical Practice 2, which is specifically addressed in the following modules:</p> <p>G8 M1: Integer Exponents and Scientific Notation</p> <p>G8 M3: Similarity</p> <p>G8 M5: Examples of Functions from Geometry</p> <p>G8 M7: Introduction to Irrational Numbers Using Geometry</p>
<p>g. display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.</p>	<p>This process standard is analogous to the CCSSM Standards for Mathematical Practice 3, which is specifically addressed in the following modules:</p> <p>G8 M1: Integer Exponents and Scientific Notation</p> <p>G8 M2: The Concept of Congruence</p> <p>G8 M3: Similarity</p> <p>G8 M4: Linear Equations</p>

Skill	Expectations	Aligned Components of <i>Eureka Math</i>
<b>Number and Operations</b>	<b>111.28.2</b> The student applies mathematical process standards to represent and use real numbers in a variety of forms. The student is expected to:	
	a. extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of real numbers;	<i>Eureka Math</i> does not address sets and subsets.
	b. approximate the value of an irrational number, including $\pi$ and square roots of numbers less than 225, and locate that rational number approximation on a number line;	G8 M7 Topic A: Square and Cube Roots  G8 M7 Lesson 10: Converting Repeating Decimals to Fractions  G8 M7 Lesson 11: The Decimal Expansion of Some Irrational Numbers  G8 M7 Lesson 13: Comparing Irrational Numbers  G8 M7 Lesson 14: Decimal Expansion of $\pi$
	c. convert between standard decimal notation and scientific notation; and	G8 M1: Integer Exponents and Scientific Notation
	d. order a set of real numbers arising from mathematical and real-world contexts.	G6 M3 Topic B: Order and Absolute Value

Skill	Expectations	Aligned Components of <i>Eureka Math</i>
<b>Proportionality</b>	<p><b>111.28.3</b></p> <p>The student applies mathematical process standards to use proportional relationships to describe dilations. The student is expected to:</p>	
	<p>a. generalize that the ratio of corresponding sides of similar shapes are proportional, including a shape and its dilation;</p>	G8 M3: Similarity
	<p>b. compare and contrast the attributes of a shape and its dilation(s) on a coordinate plane; and</p>	G8 M3 Topic A: Dilation
	<p>c. use an algebraic representation to explain the effect of a given positive rational scale factor applied to two-dimensional figures on a coordinate plane with the origin as the center of dilation.</p>	<p>G8 M3 Topic A: Dilation</p> <p>G8 M3 Lesson 8: Similarity</p>
	<p><b>111.28.4</b></p> <p>The student applies mathematical process standards to explain proportional and non-proportional relationships involving slope. The student is expected to:</p>	
	<p>a. use similar right triangles to develop an understanding that slope, <math>m</math>, given as the rate comparing the change in <math>y</math>-values to the change in <math>x</math>-values, <math>(y_2 - y_1)/(x_2 - x_1)</math>, is the same for any two points <math>(x_1, y_1)</math> and <math>(x_2, y_2)</math> on the same line;</p>	G8 M4 Topic C: Slope and Equations of Lines

Skill	Expectations	Aligned Components of <i>Eureka Math</i>
	b. graph proportional relationships, interpreting the unit rate as the slope of the line that models the relationship; and	G8 M4 Topic B: Linear Equations in Two Variables and Their Graphs  G8 M4 Lesson 15: The Slope of a Non-Vertical Line  G8 M4 Lesson 22: Constant Rates Revisited  G8 M4 Lesson 24: Introduction to Simultaneous Equations
	c. use data from a table or graph to determine the rate of change or slope and $y$ -intercept in mathematical and real-world problems.	G8 M4 Topic C: Slope and Equations of Lines
	<b>111.28.5</b> The student applies mathematical process standards to use proportional and non-proportional relationships to develop foundational concepts of functions. The student is expected to:	
	a. represent linear proportional situations with tables, graphs, and equations in the form of $y = kx$ ;	G8 M4 Topic B: Linear Equations in Two Variables and Their Graphs
	b. represent linear non-proportional situations with tables, graphs, and equations in the form of $y = mx + b$ , where $b \neq 0$ ;	G8 M4 Lesson 2: Linear and Nonlinear Expressions in $x$



Skill	Expectations	Aligned Components of <i>Eureka Math</i>
	c. contrast bivariate sets of data that suggest a linear relationship with bivariate sets of data that do not suggest a linear relationship from a graphical representation;	G8 M6 Topic B: Bivariate Numerical Data
	d. use a trend line that approximates the linear relationship between bivariate sets of data to make predictions;	G8 M6 Topic B: Bivariate Numerical Data G8 M6 Lesson 11: Using Linear Models in a Data Context
	e. solve problems involving direct variation;	G8 M4 Topic B: Linear Equations in Two Variables and Their Graphs
	f. distinguish between proportional and non-proportional situations using tables, graphs, and equations in the form $y = kx$ or $y = mx + b$ , where $b \neq 0$ ;	G8 M4 Topic B: Linear Equations in Two Variables and Their Graphs
	g. identify functions using sets of ordered pairs, tables, mappings, and graphs;	G8 M5: Examples of Functions from Geometry
	h. identify examples of proportional and non-proportional functions that arise from mathematical and real-world problems; and	G7 M1: Ratios and Proportional Relationships G8 M4 Topic B: Linear Equations in Two Variables and Their Graphs
	i. write an equation in the form $y = mx + b$ to model a linear relationship between two quantities using verbal, numerical, tabular, and graphical representations.	G8 M5: Examples of Functions from Geometry G8 M6 Topic A: Linear Functions

Skill	Expectations	Aligned Components of <i>Eureka Math</i>
<b>Expressions, Equations, and Relationships</b>	<b>111.28.6</b> The student applies mathematical process standards to develop mathematical relationships and make connections to geometric formulas. The student is expected to:	
	a. describe the volume formula $V = Bh$ of a cylinder in terms of its base area and its height;	G8 M5: Examples of Functions from Geometry G8 M7 Lesson 21: Volume of Composite Solids
	b. model the relationship between the volume of a cylinder and a cone having both congruent bases and heights and connect that relationship to the formulas; and	G8 M5: Examples of Functions from Geometry G8 M7 Topic D: Applications of Radicals and Roots
	c. use models and diagrams to explain the Pythagorean theorem.	G8 M2 Topic D: The Pythagorean Theorem G8 M3 Topic C: The Pythagorean Theorem G8 M4 Topic E: Pythagorean Theorem G8 M7: Introduction to Irrational Numbers Using Geometry

Skill	Expectations	Aligned Components of <i>Eureka Math</i>
	<p><b>111.28.7</b> The student applies mathematical process standards to use geometry to solve problems. The student is expected to:</p>	
	<p>a. use previous knowledge of surface area to make connections to the formulas for lateral and total surface area and determine solutions for problems involving rectangular prisms, triangular prisms, and cylinders;</p>	<p>G6 M5 Topic D: Nets and Surface Area G7 M3 Lessons 21–22: Surface Area G7 M3 Lessons 25–26: Volume and Surface Area G7 M6 Topic D: Problems Involving Area and Surface Area Note: Supplemental material is necessary to address surface area of cylinders.</p>
	<p>b. use the Pythagorean Theorem and its converse to solve problems; and</p>	<p>G8 M2 Topic D: The Pythagorean Theorem G8 M3 Topic C: The Pythagorean Theorem G8 M4 Topic E: Pythagorean Theorem G8 M7: Introduction to Irrational Numbers Using Geometry</p>
	<p>c. determine the distance between two points on a coordinate plane using the Pythagorean Theorem.</p>	<p>G8 M2 Topic D: The Pythagorean Theorem G8 M7 Lesson 17: Distance on the Coordinate Plane</p>

Skill	Expectations	Aligned Components of <i>Eureka Math</i>
	<p><b>111.28.8</b></p> <p>The student applies mathematical process standards to use one-variable equations or inequalities in problem situations. The student is expected to:</p>	
	<p>a. write one-variable equations or inequalities with variables on both sides that represent problems using rational number coefficients and constants;</p>	<p>G8 M4 Topic A: Writing and Solving Linear Equations</p> <p>Algebra I M1 Topic C: Solving Equations and Inequalities</p>
	<p>b. write a corresponding real-world problem when given a one-variable equation or inequality with variables on both sides of the equal sign using rational number coefficients and constants;</p>	<p><i>Eureka Math</i> does not ask students to write real-world problems when presented an equation or inequality.</p>
	<p>c. model and solve one-variable equations with variables on both sides of the equal sign that represent mathematical and real-world problems using rational number coefficients and constants; and</p>	<p>G8 M4 Topic A: Writing and Solving Linear Equations</p> <p>G8 M4 Lesson 30: Conversion Between Celsius and Fahrenheit</p>
	<p>d. use informal arguments to establish facts about the angle sum and exterior angle of triangles, the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.</p>	<p>G8 M2 Topic C: Congruence and Angle Relationships</p> <p>G8 M3 Topic B: Similar Figures</p>

Skill	Expectations	Aligned Components of <i>Eureka Math</i>
	<p><b>111.28.9</b></p> <p>The student applies mathematical process standards to use multiple representations to develop foundational concepts of simultaneous linear equations. The student is expected to identify and verify the values of <math>x</math> and <math>y</math> that simultaneously satisfy two linear equations in the form <math>y = mx + b</math> from the intersections of the graphed equations.</p>	<p>G8 M4 Topic D: Systems of Linear Equations and Their Solutions</p> <p>Note: Learning systems of linear equations is extended in Algebra I M1 Topic C.</p>
<p><b>Two-Dimensional Shapes</b></p>	<p><b>111.28.10</b></p> <p>The student applies mathematical process standards to develop transformational geometry concepts. The student is expected to:</p>	
	<p>a. generalize the properties of orientation and congruence of rotations, reflections, translations, and dilations of two-dimensional shapes on a coordinate plane;</p>	<p>G8 M2: The Concept of Congruence</p> <p>G8 M3 Topic A: Dilation</p>
	<p>b. differentiate between transformations that preserve congruence and those that do not;</p>	<p>G8 M2: The Concept of Congruence</p> <p>G8 M3 Topic A: Dilation</p>
	<p>c. explain the effect of translations, reflections over the <math>x</math>- or <math>y</math>-axis, and rotations limited to <math>90^\circ</math>, <math>180^\circ</math>, <math>270^\circ</math>, and <math>360^\circ</math> as applied to two-dimensional shapes on a coordinate plane using an algebraic representation; and</p>	<p>G8 M2: The Concept of Congruence</p>

Skill	Expectations	Aligned Components of <i>Eureka Math</i>
	d. model the effect on linear and area measurements of dilated two-dimensional shapes.	G8 M3 Topic A: Dilation
<b>Measurement and Data</b>	<b>111.28.11</b> The student applies mathematical process standards to use statistical procedures to describe data. The student is expected to:	
	a. construct a scatterplot and describe the observed data to address questions of association such as linear, non-linear, and no association between bivariate data;	G8 M6: Linear Functions
	b. determine the mean absolute deviation and use this quantity as a measure of the average distance data are from the mean using a data set of no more than 10 data points; and	G6 M6 Lesson 9: The Mean Absolute Deviation (MAD)
	c. simulate generating random samples of the same size from a population with known characteristics to develop the notion of a random sample being representative of the population from which it was selected.	G7 M5 Topic C: Random Sampling and Estimating Population Characteristics

Skill	Expectations	Aligned Components of <i>Eureka Math</i>
<b>Personal Financial Literacy</b>	<p><b>111.28.12</b></p> <p>The student applies mathematical process standards to develop an economic way of thinking and problem solving useful in one’s life as a knowledgeable consumer and investor. The student is expected to:</p>	
	<p>a. solve real-world problems comparing how interest rate and loan length affect the cost of credit;</p>	<i>Eureka Math</i> does not address personal financial skills.
	<p>b. calculate the total cost of repaying a loan, including credit cards and easy access loans, under various rates of interest and over different periods using an online calculator;</p>	<i>Eureka Math</i> does not address personal financial skills.
	<p>c. explain how small amounts of money invested regularly, including money saved for college and retirement, grow over time;</p>	<i>Eureka Math</i> does not address personal financial skills.
	<p>d. calculate and compare simple interest and compound interest earnings;</p>	<i>Eureka Math</i> does not address personal financial skills.
	<p>e. identify and explain the advantages and disadvantages of different payment methods;</p>	<i>Eureka Math</i> does not address personal financial skills.

Skill	Expectations	Aligned Components of <i>Eureka Math</i>
	f. analyze situations to determine if they represent financially responsible decisions and identify the benefits of financial responsibility and the costs of financial irresponsibility; and	<i>Eureka Math</i> does not address personal financial skills.
	g. estimate the cost of a two-year and four-year college education, including family contribution, and devise a periodic savings plan for accumulating the money needed to contribute to the total cost of attendance for at least the first year of college.	<i>Eureka Math</i> does not address personal financial skills.