EUREKA MATH™

GREAT MINDS

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.

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

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.

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

GRADE 1 MATHEMATICS

The Grade 1 Connecticut Common Core State Standards: Mathematics are fully covered by the Grade 1 *Eureka Math* curriculum. A detailed analysis of alignment is provided in the table below.

INDICATORS

- Green indicates that the Connecticut standard is fully addressed in *Eureka Math*.
- Yellow indicates that the Connecticut standard may not be completely addressed in *Eureka Math*.
- Red indicates that the Connecticut 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 Connecticut standards and in *Eureka Math*.

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
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. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.	Lessons in every module engage students in making sense of problems and persevering in solving them as required by this standard. This practice standard is analogous to the CCSSM Standards for Mathematical Practice 1, which is specifically addressed in the following modules: G1 M5: Identifying, Composing, and Partitioning Shapes G1 M6: Place Value, Comparison, Addition and Subtraction to 100

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
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.	Lessons in every module engage students in reasoning abstractly and quantitatively as required by this standard. This practice standard is analogous to the CCSSM Standards for Mathematical Practice 2, which is specifically addressed in the following modules: G1 M1: Sums and Differences to 10 G1 M2: Introduction to Place Value Through Addition and Subtraction Within 20 G1 M3: Ordering and Comparing Length Measurements as Numbers

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
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 are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, 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. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.	Lessons in every module engage students in constructing viable arguments and critiquing the reasoning of others as required by this standard. This practice standard is analogous to the CCSSM Standards for Mathematical Practice 3, which is specifically addressed in the following modules: G1 M3: Ordering and Comparing Length Measurements as Numbers G1 M4: Place Value, Comparison, Addition and Subtraction to 40 G1 M6: Place Value, Comparison, Addition and Subtraction to 100

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
4: Model with mathematics. Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know 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 can 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.	Lessons in every module engage students in modeling with mathematics as required by this standard. This practice standard is analogous to the CCSSM Standards for Mathematical Practice 4, which is specifically addressed in the following modules: G1 M2: Introduction to Place Value Through Addition and Subtraction Within 20 G1 M6: Place Value, Comparison, Addition and Subtraction to 100

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
5: Use appropriate tools strategically. Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. 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. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.	Lessons in every module engage students in using appropriate tools strategically as required by this standard. This practice standard is analogous to the CCSSM Standards for Mathematical Practice 5, which is specifically addressed in the following modules: G1 M4: Place Value, Comparison, Addition and Subtraction to 40 G1 M6: Place Value, Comparison, Addition and Subtraction to 100

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
6: Attend to precision. Mathematically proficient students try to communicate precisely to others. They try to use clear definitions 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 are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.	Lessons in every module engage students in attending to precision as required by this standard. This practice standard is analogous to the CCSSM Standards for Mathematical Practice 6, which is specifically addressed in the following modules: G1 M1: Sums and Differences to 10 G1 M3: Ordering and Comparing Length Measurements as Numbers G1 M4: Place Value, Comparison, Addition and Subtraction to 40 G1 M5: Identifying, Composing, and Partitioning Shapes

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
7: Look for and make use of structure. Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.	Lessons in every module engage students in looking for and making use of structure as required by this standard. This practice standard is analogous to the CCSSM Standards for Mathematical Practice 7, which is specifically addressed in the following modules: G1 M1: Sums and Differences to 10 G1 M2: Introduction to Place Value Through Addition and Subtraction Within 20 G1 M3: Ordering and Comparing Length Measurements as Numbers G1 M4: Place Value, Comparison, Addition and Subtraction to 40 G1 M5: Identifying, Composing, and Partitioning Shapes

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
8: Look for and express regularity in repeated reasoning. Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.	Lessons in every module engage students in looking for and expressing regularity in repeated reasoning as required by this standard. This practice standard is analogous to the CCSSM Standards for Mathematical Practice 8, which is specifically addressed in the following modules: G1 M1: Sums and Differences to 10 G1 M2: Introduction to Place Value Through Addition and Subtraction Within 20

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
Operations and Algebraic Thinking	**Cluster: Represent and solve problems involving addition and subtraction.**	
	1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	G1 M1 Topic B: Counting On from Embedded Numbers G1 M1 Topic C: Addition Word Problems G1 M1 Lesson 25: Solve *add to with change unknown* math stories with addition, and relate to subtraction. Model with materials, and write corresponding number sentences. G1 M1 Topic H: Subtraction Word Problems G1 M2: Introduction to Place Value Through Addition and Subtraction Within 20 G1 M3 Lesson 9: Answer *compare with difference unknown* problems about lengths of two different objects measured in centimeters. G1 M3 Topic D: Data Interpretation G1 M4 Topic E: Varied Problem Types Within 20 G1 M6 Topic A: Comparison Word Problems
	1.OA.A.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	G1 M2 Lesson 1: Solve word problems with three addends, two of which make ten. G1 M2 Lesson 2: Use the associative and commutative properties to make ten with three addends.

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	Cluster: Understand and apply properties of operations and the relationship between addition and subtraction.	
	1.OA.B.3 Apply properties of operations as strategies to add and subtract.	G1 M1 Topic E: The Commutative Property of Addition and the Equal Sign G1 M1 Topic F: Development of Addition Fluency Within 10 G1 M2: Introduction to Place Value Through Addition and Subtraction within 20 G1 M4 Topic D: Addition of Tens or Ones to a Two-Digit Number
	1.OA.B.4 Understand subtraction as an unknown-addend problem.	G1 M1 Topic G: Subtraction as an Unknown Addend Problem G1 M1 Topic H: Subtraction Word Problems G1 M2 Lesson 16: Relate counting on to making ten and taking from ten. G1 M2 Lesson 19: Compare efficiency of counting on and taking from ten. G1 M2 Lesson 21: Share and critique peer solution strategies for *take from with result unknown* and *take apart with addend unknown* word problems from the teens. G1 M2 Topic C: Strategies for Solving *Change* or *Addend Unknown* Problems

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	Cluster: Add and subtract within 20.	
	1.OA.C.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).	G1 M1 Lesson 3: See and describe numbers of objects using *1 more* within 5-group configurations. G1 M1 Topic B: Counting On from Embedded Numbers G1 M1 Topic D: Strategies for Counting On G1 M1 Topic G: Subtraction as an Unknown Addend Problem G1 M1 Lesson 33: Model 0 less and 1 less pictorially and as subtraction number sentences. G1 M6 Topic A: Comparison Word Problems
	1.OA.C.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).	G1 M1: Sums and Differences to 10 G1 M2: Introduction to Place Value Through Addition and Subtraction Within 20 G1 M4 Lesson 29: Add a pair of two-digit numbers with varied sums in the ones. G1 M6 Topic A: Comparison Word Problems

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	Cluster: Work with addition and subtraction equations.	
	1.OA.D.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false.	G1 M1 Topic E: The Commutative Property of Addition and the Equal Sign G1 M2 Lesson 25: Strategize and apply understanding of the equal sign to solve equivalent expressions.
	1.OA.D.8 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.	G1 M1 Topic C: Addition Word Problems G1 M1 Lesson 16: Count on to find the unknown part in missing addend equations such as 6 + _ = 9. Answer, "How many more to make 6, 7, 8, 9, and 10?" G1 M1 Topic H: Subtraction Word Problems G1 M4 Topic E: Varied Problem Types Within 20 G1 M6 Topic A: Comparison Word Problems
Number and Operations in Base Ten	**Cluster: Extend the counting sequence.**	
	1.NBT.A.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.	G1 M4 Lesson 1: Compare the efficiency of counting by ones and counting by tens. G1 M6 Lesson 7: Count and write numbers to 120. Use Hide Zero cards to relate numbers 0 to 20 to 100 to 120. G1 M6 Lesson 8: Count to 120 in unit form using only tens and ones. Represent numbers to 120 as tens and ones on the place value chart. G1 M6 Lesson 9: Represent up to 120 objects with a written numeral.

Domain	Standards for Mathematical Content		Aligned Components of *Eureka Math*
	Cluster: Understand place value.		
	1.NBT.B.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:		
	a. 10 can be thought of as a bundle of ten ones—called a "ten."		G1 M2 Topic D: Varied Problems with Decompositions of Teen Numbers as 1 Ten and Some Ones G1 M4 Topic A: Tens and Ones G1 M4 Lesson 23: Interpret two-digit numbers as tens and ones, including cases with more than 9 ones. G1 M6 Lesson 3: Use the place value chart to record and name tens and ones within a two-digit number up to 100. G1 M6 Lesson 4: Write and interpret two-digit numbers to 100 as addition sentences that combine tens and ones.
	b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.		G1 M2 Topic D: Varied Problems with Decompositions of Teen Numbers as 1 Ten and Some Ones

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	c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).		G1 M4 Topic A: Tens and Ones G1 M4 Lesson 23: Interpret two-digit numbers as tens and ones, including cases with more than 9 ones. G1 M6 Lesson 3: Use the place value chart to record and name tens and ones within a two-digit number up to 100. G1 M6 Lesson 4: Write and interpret two-digit numbers to 100 as addition sentences that combine tens and ones. G1 M6 Lesson 24: Use dimes and pennies as representations of numbers to 120.
	1.NBT.B.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.		G1 M4 Topic B: Comparison of Pairs of Two-Digit Numbers G1 M6 Lesson 6: Use the symbols >, =, and < to compare quantities and numerals to 100.

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	Cluster: Use place value understanding and properties of operations to add and subtract.	
	1.NBT.C.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.	G1 M4: Place Value, Comparison, Addition and Subtraction to 40 G1 M6 Topic C: Addition to 100 Using Place Value Understanding G1 M6 Topic D: Varied Place Value Strategies for Addition to 100
	1.NBT.C.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.	G1 M4 Lesson 5: Identify 10 more, 10 less, 1 more, and 1 less than a two-digit number. G1 M4 Lesson 6: Use dimes and pennies as representations of tens and ones. G1 M6 Lesson 5: Identify 10 more, 10 less, 1 more, and 1 less than a two-digit number within 100.

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	1.NBT.C.6 Subtract multiples of 10 in the range 10–90 from multiples of 10 in the range 10–90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	G1 M4 Topic C: Addition and Subtraction of Tens G1 M6 Lesson 10: Add and subtract multiples of 10 from multiples of 10 to 100, including dimes.
Measurement and Data	**Cluster: Measure lengths indirectly and by iterating length units.**	
	1.MD.A.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.	G1 M3 Topic A: Indirect Comparison in Length Measurement G1 M3 Lesson 6: Order, measure, and compare the length of objects before and after measuring with centimeter cubes, solving *compare with difference unknown* word problems.
	1.MD.A.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.	G1 M3: Ordering and Comparing Length Measurements as Numbers

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	Cluster: Tell and write time.	
	1.MD.B.3 Tell and write time in hours and half-hours using analog and digital clocks.	G1 M5 Topic D: Application of Halves to Tell Time
	Cluster: Represent and interpret data.	
	1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	G1 M3 Topic D: Data Interpretation

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Geometry	**Cluster: Reason with shapes and their attributes.**	
	1.G.A.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.	G1 M5 Topic A: Attributes of Shapes
	1.G.A.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.	G1 M5 Topic B: Part-Whole Relationships Within Composite Shapes
	1.G.A.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves, fourths*, and *quarters*, and use the phrases *half of, fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.	G1 M5: Identifying, Composing, and Partitioning Shapes