ABOUT EUREKA MATH

ALIGNED

DATA

FULL SUITE OF RESOURCES

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.

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.

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.

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


## Arizona Mathematics Standards Correlation to Eureka Math ${ }^{T M}$

## GRADE 3 MATHEMATICS

The majority of the Grade 3 Arizona Mathematics Standards are fully covered by the Grade 3 Eureka Math curriculum. The primary area where the Grade 3 Arizona Mathematics Standards and Grade 3 Eureka Math do not align is in the domain of Measurement and Data. Standards from this domain will require the use of Eureka Math content from other grade levels. A detailed analysis of alignment is provided in the table below.

## INDICATORS

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

## Standards for Mathematical Practice

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

Mathematically proficient students explain to themselves the meaning of a problem, look for entry points to begin work on the problem, and plan and choose a solution pathway. While engaging in productive struggle to solve a problem, they continually ask themselves, "Does this make sense?" to monitor and evaluate their progress and change course if necessary. Once they have a solution, they look back at the problem to determine if the solution is reasonable and accurate. Mathematically proficient students check their solutions to problems using different methods, approaches, or representations. They also compare and understand different representations of problems and different solution pathways, both their own and those of others.

## Aligned Components of Eureka Math

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:

G3 M1: Properties of Multiplication and Division and Solving Problems with Units of 2-5 and 10

G3 M3: Multiplication and Division with Units of o, 1, 6-9, and Multiples of 10

G3 M7: Geometry and Measurement Word Problems

## Standards for Mathematical Practice

2: Reason abstractly and quantitatively.
Mathematically proficient students make sense of quantities and their relationships in problem situations. Students can contextualize and decontextualize problems involving quantitative relationships. They contextualize quantities, operations, and expressions by describing a corresponding situation. They decontextualize a situation by representing it symbolically. As they manipulate the symbols, they can pause as needed to access the meaning of the numbers, the units, and the operations that the symbols represent. Mathematically proficient students know and flexibly use different properties of operations, numbers, and geometric objects and when appropriate they interpret their solution in terms of the context.

## Aligned Components of Eureka Math

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:

G3 M1: Properties of Multiplication and Division and Solving Problems with Units of 2-5 and 10

G3 M2: Place Value and Problem Solving with Units of Measure

G3 M4: Multiplication and Area
G3 M5: Fractions as Numbers on the Number Line
G3 M6: Collecting and Displaying Data

## Standards for Mathematical Practice

## 3: Construct viable arguments and critique the reasoning of others.

Mathematically proficient students construct mathematical arguments (explain the reasoning underlying a strategy, solution, or conjecture) using concrete, pictorial, or symbolic referents. Arguments may also rely on definitions, assumptions, previously established results, properties, or structures. Mathematically proficient students 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. Mathematically proficient students present their arguments in the form of representations, actions on those representations, and explanations in words (oral or written). Students critique others by affirming or questioning the reasoning of others. They can listen to or read the reasoning of others, decide whether it makes sense, ask questions to clarify or improve the reasoning, and validate or build on it. Mathematically proficient students can communicate their arguments, compare them to others, and reconsider their own arguments in response to the critiques of others.

## Aligned Components of Eureka Math

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:

G3 M1: Properties of Multiplication and Division and Solving Problems with Units of 2-5 and 10

G3 M3: Multiplication and Division with Units of o, 1, 6-9, and Multiples of 10

G3 M4: Multiplication and Area
G3 M5: Fractions as Numbers on the Number Line
G3 M7: Geometry and Measurement Word Problems

## Standards for Mathematical Practice

## 4: Model with mathematics.

Mathematically proficient students apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. When given a problem in a contextual situation, they identify the mathematical elements of a situation and create a mathematical model that represents those mathematical elements and the relationships among them. Mathematically proficient students use their model to analyze the relationships and draw conclusions. They 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.

## Aligned Components of Eureka Math

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:

G3 M1: Properties of Multiplication and Division and Solving Problems with Units of 2-5 and 10

G3 M2: Place Value and Problem Solving with Units of Measure

G3 M3: Multiplication and Division with Units of o, 1, 6-9, and Multiples of 10

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:

G3 M3: Multiplication and Division with Units of o, 1, 6-9, and Multiples of 10

G3 M6: Collecting and Displaying Data
G3 M7: Geometry and Measurement Word Problems

## Standards for Mathematical Practice

## 6: Attend to precision.

Mathematically proficient students clearly communicate to others using appropriate mathematical terminology, and craft explanations to convey their reasoning. When making mathematical arguments about a solution, strategy, or conjecture, they describe mathematical relationships and connect their words clearly to their representations. Mathematically proficient students understand meanings of symbols used in mathematics, calculate accurately and efficiently, label quantities appropriately, and record their work clearly and concisely.

## Aligned Components of Eureka Math

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:

G3 M2: Place Value and Problem Solving with Units of Measure

G3 M4: Multiplication and Area
G3 M5: Fractions as Numbers on the Number Line
G3 M6: Collecting and Displaying Data
G3 M7: Geometry and Measurement Word Problems

## Standards for Mathematical Practice

## 7: Look for and make use of structure.

Mathematically proficient students use structure and patterns to assist in making connections among mathematical ideas or concepts when making sense of mathematics. Students recognize and apply general mathematical rules to complex situations. They are able to compose and decompose mathematical ideas and notations into familiar relationships. Mathematically proficient students manage their own progress, stepping back for an overview and shifting perspective when needed.

## Aligned Components of Eureka Math

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:

G3 M1: Properties of Multiplication and Division and Solving Problems with Units of 2-5 and 10

G3 M2: Place Value and Problem Solving with Units of Measure

G3 M3: Multiplication and Division with Units of $0,1,6-9$, and Multiples of 10

G3 M4: Multiplication and Area
G3 M5: Fractions as Numbers on the Number Line
G3 M6: Collecting and Displaying Data

## Standards for Mathematical Practice

## 8: Look for and express regularity in repeated reasoning.

Mathematically proficient students look for and describe regularities as they solve multiple related problems. They formulate conjectures about what they notice and communicate observations with precision. While solving problems, students maintain oversight of the process and continually evaluate the reasonableness of their results. This informs and strengthens their understanding of the structure of mathematics which leads to fluency.

## Aligned Components of Eureka Math

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:

G3 M4: Multiplication and Area

| Domain | Standards for Mathematical Content | Aligned Components of Eureka Math |
| :---: | :---: | :---: |
| Operations and Algebraic Thinking | Cluster: Represent and solve problems involving whole number multiplication and division. |  |
|  | 3.OA.A. 1 <br> Interpret products of whole numbers as the total number of objects in equal groups (e.g., interpret $5 \times 7$ as the total number of objects in 5 groups of 7 objects each). | G3 M1 Topic A: Multiplication and the Meaning of the Factors <br> G3 M1 Topic C: Multiplication Using Units of 2 and 3 |
|  | 3.OA.A. 2 <br> Interpret whole number quotients of whole numbers (e.g., interpret $56 \div 8$ as the number of objects in each group when 56 objects are partitioned equally into 8 groups, or as a number of groups when 56 objects are partitioned into equal groups of 8 objects each). | G3 M1 Topic B: Division as an Unknown Factor Problem <br> G3 M1 Topic D: Division Using Units of 2 and 3 <br> G3 M1 Lesson 17: Model the relationship between multiplication and division. |
|  | 3.OA.A. 3 <br> Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. | G3 M1 Topic D: Division Using Units of 2 and 3 <br> G3 M1 Topic F: Distributive Property and Problem Solving Using Units of 2-5 and 10 <br> G3 M3 Lesson 7: Interpret the unknown in multiplication and division to model and solve problems using units of 6 and 7 . <br> G3 M3 Lesson 11: Interpret the unknown in multiplication and division to model and solve problems. <br> G3 M3 Lesson 15: Interpret the unknown in multiplication and division to model and solve problems. <br> G3 M3 Lesson 18: Solve two-step word problems involving all four operations and assess the reasonableness of solutions. |


| Domain | Standards for Mathematical Content | Aligned Components of Eureka Math |
| :---: | :---: | :---: |
|  | 3.OA.A. 4 <br> Determine the unknown whole number in a multiplication or division equation relating three whole numbers. | G3 M1 Topic D: Division Using Units of 2 and 3 <br> G3 M1 Lesson 17: Model the relationship between multiplication and division. <br> G3 M3 Lesson 3: Multiply and divide with familiar facts using a letter to represent the unknown. <br> G3 M3 Topic B: Multiplication and Division Using Units of 6 and 7 <br> G3 M3 Lesson 11: Interpret the unknown in multiplication and division to model and solve problems. <br> G3 M3 Lesson 15: Interpret the unknown in multiplication and division to model and solve problems. |
|  | Cluster: Understand properties of multiplication and the relationship between multiplication and division. |  |
|  | 3.OA.B. 5 <br> Apply properties of operations as strategies to multiply and divide. Properties include commutative and associative properties of multiplication and the distributive property. (Students do not need to use the formal terms for these properties.) | G3 M1: Properties of Multiplication and Division and Solving Problems with Units of 2-5 and 10 <br> G3 M3: Multiplication and Division with Units of 0, 1, 6-9, and Multiples of 10 |


| Domain ${ }^{\text {S }}$ Standards for Mathematical Content |  | Aligned Components of Eureka Math |
| :---: | :---: | :---: |
|  | 3.OA.B. 6 <br> Understand division as an unknown-factor problem (e.g., find $32 \div 8$ by finding the number that makes 32 when multiplied by 8 ). | G3 M1 Topic B: Division as an Unknown Factor Problem <br> G3 M1 Topic D: Division Using Units of 2 and 3 <br> G3 M1 Lesson 17: Model the relationship between multiplication and division. <br> G3 M3 Topic B: Multiplication and Division Using Units of 6 and 7 |
|  | Cluster: Multiply and divide within 100. |  |
|  | 3.OA.C. 7 <br> Fluently multiply and divide within 100. By the end of Grade 3, know from memory all multiplication products through $10 \times 10$ and division quotients when both the quotient and divisor are less than or equal to 10. | G3 M1 Topic E: Multiplication and Division Using Units of 4 G3 M3: Multiplication and Division with Units of 0, 1, 6-9, and Multiples of 10 |

## Domain <br> Standards for Mathematical Content <br> Aligned Components of Eureka Math



| Domain | Standards for Mathematical Content | Aligned Components of Eureka Math |
| :---: | :---: | :---: |
|  | 3.OA.D. 10 <br> When solving problems, assess the reasonableness of answers using mental computation and estimation strategies including rounding. | G3 M2 Lesson 17: Estimate sums by rounding and apply to solve measurement word problems. <br> G3 M2 Topic E: Two- and Three-Digit Measurement Subtraction Using the Standard Algorithm <br> G3 M3 Lesson 18: Solve two-step word problems involving all four operations and assess the reasonableness of solutions. <br> G3 M7 Lessons 28-29: Solve a variety of word problems involving area and perimeter using all four operations. |
| Number and Operations in Base Ten | Cluster: Use place value understanding and properties of operations to perform multi-digit arithmetic. |  |
|  | 3.NBT.A. 1 <br> Use place value understanding to round whole numbers to the nearest 10 or 100 . | G3 M2 Topic C: Rounding to the Nearest Ten and Hundred G3 M2 Lesson 17: Estimate sums by rounding and apply to solve measurement word problems. <br> G3 M2 Topic E: Two- and Three-Digit Measurement Subtraction Using the Standard Algorithm |

Standards for Mathematical Content

## 3.NBT.A. 2

Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.


## Number and OperationsFractions

## Domain <br> Standards for Mathematical Content <br> Aligned Components of Eureka Math

Cluster: Understand fractions as numbers.
\(\left.$$
\begin{array}{|l|l|}\hline \begin{array}{l}\text { 3.NF.A.1 } \\
\begin{array}{l}\text { Understand a fraction }(1 / b) \text { as the quantity } \\
\text { formed by one part when a whole is partitioned } \\
\text { into } b \text { equal parts; understand a fraction } a / b \text { as } \\
\text { the quantity formed by } a \text { parts of size } 1 / b .\end{array}\end{array} & \begin{array}{l}\text { G3 M5 Topic B: Unit Fractions and their Relation to the } \\
\text { Whole }\end{array}
$$ <br>
\hline 3.NF.A.2 M5 Lesson 12: Specify the corresponding whole when <br>

presented with one equal part.\end{array}\right]\)| Understand a fraction as a number on the <br> number line; represent fractions on a number <br> line diagram. |
| :--- |


|  | 3.NF.A. 3 <br> Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. |  |
| :---: | :---: | :---: |
|  | a. Understand two fractions as equivalent if they have the same relative size compared to 1 whole. | G3 M5 Topic E: Equivalent Fractions |
|  | b. Recognize and generate simple equivalent fractions. Explain why the fractions are equivalent. | G3 M5 Topic E: Equivalent Fractions |
|  | c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. | G3 M5 Topic D: Fractions on the Number Line G3 M5 Topic E: Equivalent Fractions |
|  | d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Understand that comparisons are valid only when the two fractions refer to the same whole. Record results of comparisons with the symbols $>,=$, or $<$, and justify conclusions. | G3 M5 Topic C: Comparing Unit Fractions and Specifying the Whole <br> G3 M5 Lesson 18: Compare fractions and whole numbers on the number line by reasoning about their distance from 0 . <br> G3 M5 Lesson 19: Understand distance and position on the number line as strategies for comparing fractions. <br> G3 M5 Topic F: Comparison, Order, and Size of Fractions |


| Domain | Standards for Mathematical Content | Aligned Components of Eureka Math |
| :---: | :---: | :---: |
| Measurement and Data | Cluster: Solve problems involving measurement. |  |
|  | 3.MD.A.1a <br> Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes (e.g., representing the problem on a number line diagram). | G3 M2 Topic A: Time Measurement and Problem Solving <br> G3 M2 Lesson 12: Round two-digit measurements to the nearest ten on the vertical number line. |
|  | 3.MD.A.1b <br> Solve word problems involving money through \$20.00, using symbols \$, ".", ф. | G2 M7 Topic B: Problem Solving with Coins and Bills |
|  | 3.MD.A. 2 <br> Measure and estimate liquid volumes and masses of objects using metric units. (Excludes compound units such as $\mathrm{cm}^{3}$ and finding the geometric volume of a container.) Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units. Excludes multiplicative comparison problems (problems involving notions of "times as much"). | G3 M2 Topic B: Measuring Weight and Liquid Volume in Metric Units <br> G3 M2 Lesson 12: Round two-digit measurements to the nearest ten on the vertical number line. <br> G3 M2 Lesson 21: Estimate sums and differences of measurements by rounding, and then solve mixed word problems. |

## Cluster: Represent and interpret data.

| 3.MD.B.3 <br> Create a scaled picture graph and a scaled <br> bar graph to represent a data set with several <br> categories. Solve one- and two-step "how many <br> more" and "how many less" problems using <br> information presented in scaled bar graphs. | G3 M6: Collecting and Displaying Data |
| :--- | :--- |
| 3.MD.B.4 |  |
| Generate measurement data by measuring <br> lengths using rulers marked with halves and <br> fourths of an inch to the nearest quarter-inch. <br> Show the data by making a line plot, where the <br> horizontal scale is marked off in appropriate <br> units-whole numbers, halves, or quarters. | G3 M6: Collecting and Displaying Data <br> G3 M7 Lesson 19: Use a line plot to record the number of <br> rectangles constructed from a given number of unit squares. <br> rectangles constructed in Lessons 20 and 21. |

Cluster: Geometric measurement: Understand concepts of area and perimeter.
3.MD.C. 5

Understand area as an attribute of plane figures and understand concepts of area measurement.
a. A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.

44 Lesson 6: Draw rows and columns to determine the area of a rectangle given an incomplete array.
b. A plane figure which can be covered

G3 M4 Topic A: Foundations for Understanding Area without gaps or overlaps by $n$ unit squares is said to have an area of $n$ G3 M4 Lesson 6: Draw rows and columns to determine the square units.

| Domain Standards for Mathematical Content |  | Aligned Components of Eureka Math |
| :---: | :---: | :---: |
|  | 3.MD.C. 6 <br> Measure areas by counting unit squares (e.g., square cm , square m , square in, square ft , and improvised units). | G3 M4: Multiplication and Area |
|  | 3.MD.C. 7 <br> Relate area to the operations of multiplication and addition. |  |
|  | a. Find the area of a rectangle with wholenumber side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. | G3 M4: Multiplication and Area |
|  | b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving realworld and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. | G3 M4 Lesson 8: Find the area of a rectangle through multiplication of the side lengths. <br> G3 M4 Lesson 11: Demonstrate the possible whole number side lengths of rectangles with areas of $24,36,48$, or 72 square units using the associative property. <br> G3 M4 Topic D: Applications of Area Using Side Lengths of Figures |
|  | c. Use tiling to show that the area of a rectangle with whole-number side lengths $a$ and $b+c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning. | G3 M4 Topic C: Arithmetic Properties Using Area Models |


| Domain | Standards for Mathematical Content | Aligned Components of Eureka Math |
| :---: | :---: | :---: |
|  | d. Understand that rectilinear figures can be decomposed into non-overlapping rectangles and that the sum of the areas of these rectangles is identical to the area of the original rectilinear figure. Apply this technique to solve problems in realworld contexts. | G3 M4 Topic D: Applications of Area Using Side Lengths of Figures |
|  | 3.MD.C. 8 <br> Solve real-world and mathematical problems involving perimeters of plane figures and areas of rectangles, including finding the perimeter given the side lengths, finding an unknown side length. Represent rectangles with the same perimeter and different areas or with the same area and different perimeters. | G3 M7: Geometry and Measurement Word Problems |
| Geometry | Cluster: Reason with shapes and their attributes. |  |
|  | 3.G.A. 1 <br> Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. | G3 M7 Topic B: Attributes of Two-Dimensional Figures |


| Domain | Aligned Components of Eureka Math |  |
| :--- | :--- | :--- |
|  | 3.G.A.2 <br> Partition shapes into $b$ parts with equal areas. <br> Express the area of each part as a unit fraction <br> $1 / b$ of the whole. (Grade 3 expectations are <br> limited to fractions with denominators <br> $b=2,3,4,6,8)$. | G3 M5 Topic A: Partitioning a Whole into Equal Parts |

