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## Grade 3 | Tennessee Academic Standards for Mathematics Correlation to *Eureka Math*<sup>®</sup>

### About *Eureka Math*

Created by Great Minds<sup>®</sup>, a mission-driven Public Benefit Corporation, *Eureka Math*<sup>®</sup> 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

Great Minds offers detailed analyses that demonstrate how each grade of *Eureka Math* aligns with specific state standards. Access these free alignment studies at [greatminds.org/state-studies](https://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](https://greatminds.org/data).

### Full Suite of Resources

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

Standards for Mathematical Practice	Aligned Components of <i>Eureka Math</i>
<p><b>MP.1</b> Make sense of problems and persevere in solving them.</p>	<p>Lessons in every module engage students in mathematical practices. These are designated in the Module Overview and labeled in lessons.</p> <p>For example:</p>
<p><b>MP.2</b> Reason abstractly and quantitatively.</p>	<div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;"> <span style="float: left; font-size: 0.8em; font-weight: normal;">A STORY OF UNITS</span> <span style="float: right; font-weight: bold;">Lesson 8</span> <span style="float: right; background-color: #333; color: white; padding: 2px 5px; font-weight: bold;">3•1</span> </div>
<p><b>MP.3</b> Construct viable arguments and critique the reasoning of others.</p>	<p>S: (Turn boards 90 degrees.) 3 rows and 4 columns.                      T: Tell your partner a different skip-count that also represents the array.                      S: 4, 8, 12.                      T: What is the difference between the vertical and horizontal arrays?</p>
<p><b>MP.4</b> Model with mathematics.</p>	<p>S: In the vertical array the 4 threes were rows, and in the horizontal array they were columns. → It's the same with the 3 fours. They were columns, then rows.</p>
<p><b>MP.5</b> Use appropriate tools strategically.</p>	<p><b>MP.7</b> T: Did the total number of dots change?                      S: No.                      T: So, the total and the factors stay the same, but the factors switch places. Yesterday, we learned a special name for that. It's called...</p>
<p><b>MP.6</b> Attend to precision.</p>	<p>S: Commutative! → The commutative property!                      T: Use the commutative property to write two multiplication sentences for the array.</p>
<p><b>MP.7</b> Look for and make use of structure.</p>	<p>S: (Write <math>4 \times 3 = 12</math> and <math>3 \times 4 = 12</math>.)</p>
<p><b>MP.8</b> Look for and express regularity in repeated reasoning.</p>	

## Operations and Algebraic Thinking

### 3.OA.A Represent and solve problems involving multiplication and division.

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<p><b>3.OA.A.1</b></p> <p>Interpret the factors and products in whole number multiplication equations (e.g., <math>4 \times 7</math> is 4 groups of 7 objects with a total of 28 objects or 4 strings measuring 7 inches each with a total length of 28 inches).</p>	<p>G3 M1 Topic A: Multiplication and the Meaning of the Factors</p> <p>G3 M1 Topic C: Multiplication Using Units of 2 and 3</p> <p>G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.</p>
<p><b>3.OA.A.2</b></p> <p>Interpret the dividend, divisor, and quotient in whole number division equations (e.g., <math>28 \div 7</math> can be interpreted as 28 objects divided into 7 equal groups with 4 objects in each group or 28 objects divided so there are 7 objects in each of the 4 equal groups).</p>	<p>G3 M1 Topic B: Division as an Unknown Factor Problem</p> <p>G3 M1 Topic D: Division Using Units of 2 and 3</p> <p>G3 M1 Lesson 17: Model the relationship between multiplication and division.</p> <p>G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.</p>

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<p><b>3.OA.A.3</b></p> <p>Multiply and divide within 100 to solve contextual problems, with the unknown in any positions, in situations involving equal groups, arrays/area, and measurement quantities using strategies based on place value, the properties of operations, and the relationship between multiplication and division (e.g., contexts including computations such as <math>3 \times ? = 24</math>, <math>6 \times 16 = ?</math>, <math>? \div 8 = 3</math>, or <math>96 \div 6 = ?</math>).</p>	<p>G3 M1 Topic D: Division Using Units of 2 and 3</p> <p>G3 M1 Lesson 20: Solve two-step word problems involving multiplication and division and assess the reasonableness of answers.</p> <p>G3 M1 Lesson 21: Solve two-step word problems involving all four operations and assess the reasonableness of answers.</p> <p>G3 M3 Lesson 7: Interpret the unknown in multiplication and division to model and solve problems using units of 6 and 7.</p> <p>G3 M3 Lesson 11: Interpret the unknown in multiplication and division to model and solve problems.</p> <p>G3 M3 Lesson 15: Interpret the unknown in multiplication and division to model and solve problems.</p> <p>G3 M3 Lesson 18: Solve two-step word problems involving all four operations and assess the reasonableness of solutions.</p> <p>G3 M7 Lesson 33: Solidify fluency with Grade 3 skills.</p>
<p><b>3.OA.A.4</b></p> <p>Determine the unknown whole number in a multiplication or division equation relating three whole numbers within 100.</p>	<p>G3 M1 Topic D: Division Using Units of 2 and 3</p> <p>G3 M1 Lesson 17: Model the relationship between multiplication and division.</p> <p>G3 M3 Lesson 3: Multiply and divide with familiar facts using a letter to represent the unknown.</p> <p>G3 M3 Lesson 4: Count by units of 6 to multiply and divide using number bonds to decompose.</p> <p>G3 M3 Lesson 5: Count by units of 7 to multiply and divide using number bonds to decompose.</p> <p>G3 M3 Lesson 7: Interpret the unknown in multiplication and division to model and solve problems using units of 6 and 7.</p> <p>G3 M3 Lesson 11: Interpret the unknown in multiplication and division to model and solve problems.</p> <p>G3 M3 Lesson 15: Interpret the unknown in multiplication and division to model and solve problems.</p> <p>G3 M7 Lesson 33: Solidify fluency with Grade 3 skills.</p>

## Operations and Algebraic Thinking

### 3.OA.B Understand properties of multiplication and the relationship between multiplication and division.

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<p><b>3.OA.B.5</b></p> <p>Apply properties of operations as strategies to multiply and divide.</p>	<p>G3 M1 Topic C: Multiplication Using Units of 2 and 3</p> <p>G3 M1 Lesson 15: Relate arrays to tape diagrams to model the commutative property of multiplication.</p> <p>G3 M1 Lesson 16: Use the distributive property as a strategy to find related multiplication facts.</p> <p>G3 M1 Lesson 18: Apply the distributive property to decompose units.</p> <p>G3 M1 Lesson 19: Apply the distributive property to decompose units.</p> <p>G3 M3 Lesson 1: Study commutativity to find known facts of 6, 7, 8, and 9.</p> <p>G3 M3 Lesson 2: Apply the distributive and commutative properties to relate multiplication facts <math>5 \times n + n</math> to <math>6 \times n</math> and <math>n \times 6</math> where <math>n</math> is the size of the unit.</p> <p>G3 M3 Lesson 5: Count by units of 7 to multiply and divide using number bonds to decompose.</p> <p>G3 M3 Lesson 6: Use the distributive property as a strategy to multiply and divide using units of 6 and 7.</p> <p>G3 M3 Lesson 8: Understand the function of parentheses and apply to solving problems.</p> <p>G3 M3 Lesson 9: Model the associative property as a strategy to multiply.</p> <p>G3 M3 Lesson 10: Use the distributive property as a strategy to multiply and divide.</p> <p>G3 M3 Lesson 12: Apply the distributive property and the fact <math>9 = 10 - 1</math> as a strategy to multiply.</p> <p>G3 M3 Lesson 20: Use place value strategies and the associative property <math>n \times (m \times 10) = (n \times m) \times 10</math> (where <math>n</math> and <math>m</math> are less than 10) to multiply by multiples of 10.</p> <p>G3 M7 Lesson 33: Solidify fluency with Grade 3 skills.</p> <p>G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.</p>

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<p><b>3.OA.B.6</b></p> <p>Understand division as an unknown-factor problem.</p>	<p>G3 M1 Lesson 5: Understand the meaning of the unknown as the number of groups in division.</p> <p>G3 M1 Lesson 6: Interpret the unknown in division using the array model.</p> <p>G3 M1 Topic D: Division Using Units of 2 and 3</p> <p>G3 M1 Lesson 17: Model the relationship between multiplication and division.</p> <p>G3 M3 Lesson 4: Count by units of 6 to multiply and divide using number bonds to decompose.</p> <p>G3 M3 Lesson 5: Count by units of 7 to multiply and divide using number bonds to decompose.</p>
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**Operations and Algebraic Thinking**

**3.OA.C Multiply and divide within 100.**

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<p><b>3.OA.C.7</b></p> <p>Fluently multiply and divide within 100, using strategies such as the properties of operations or the relationship between multiplication and division (e.g., knowing that <math>8 \times 5 = 40</math>, one knows <math>40 \div 5 = 8</math>). By the end of 3rd grade, know all products of two one-digit numbers and related division facts.</p>	<p>G3 M1 Lesson 14: Skip-count objects in models to build fluency with multiplication facts using units of 4.</p> <p>G3 M1 Lesson 17: Model the relationship between multiplication and division.</p> <p>G3 M3 Topic A: The Properties of Multiplication and Division</p> <p>G3 M3 Topic B: Multiplication and Division Using Units of 6 and 7</p> <p>G3 M3 Lesson 12: Apply the distributive property and the fact <math>9 = 10 - 1</math> as a strategy to multiply.</p> <p>G3 M3 Lesson 13: Identify and use arithmetic patterns to multiply.</p> <p>G3 M3 Lesson 14: Identify and use arithmetic patterns to multiply.</p> <p>G3 M3 Lesson 16: Reason about and explain arithmetic patterns using units of 0 and 1 as they relate to multiplication and division.</p> <p>G3 M3 Lesson 17: Identify patterns in multiplication and division facts using the multiplication table.</p> <p>G3 M7 Lesson 33: Solidify fluency with Grade 3 skills.</p> <p>G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.</p>
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## Operations and Algebraic Thinking

### 3.OA.D Solve problems involving the four operations and identify and explain patterns in arithmetic.

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<p><b>3.OA.D.8</b></p> <p>Solve two-step contextual problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p>	<p>G3 M3 Lesson 11: Interpret the unknown in multiplication and division to model and solve problems.</p> <p>G3 M3 Lesson 15: Interpret the unknown in multiplication and division to model and solve problems.</p> <p>G3 M3 Lesson 18: Solve two-step word problems involving all four operations and assess the reasonableness of solutions.</p> <p>G3 M3 Lesson 21: Solve two-step word problems involving multiplying single-digit factors and multiples of 10.</p> <p>G3 M7 Topic A: Solving Word Problems</p>
<p><b>3.OA.D.9</b></p> <p>Identify patterns in a multiplication chart and explain them using properties of operations.</p>	<p>G3 M3 Lesson 1: Study commutativity to find known facts of 6, 7, 8, and 9.</p> <p>G3 M3 Lesson 2: Apply the distributive and commutative properties to relate multiplication facts <math>5 \times n + n</math> to <math>6 \times n</math> and <math>n \times 6</math> where <math>n</math> is the size of the unit.</p> <p>G3 M3 Lesson 13: Identify and use arithmetic patterns to multiply.</p> <p>G3 M3 Lesson 14: Identify and use arithmetic patterns to multiply.</p> <p>G3 M3 Lesson 16: Reason about and explain arithmetic patterns using units of 0 and 1 as they relate to multiplication and division.</p> <p>G3 M3 Lesson 17: Identify patterns in multiplication and division facts using the multiplication table.</p> <p>G3 M3 Lesson 19: Multiply by multiples of 10 using the place value chart.</p> <p>G3 M3 Lesson 20: Use place value strategies and the associative property <math>n \times (m \times 10) = (n \times m) \times 10</math> (where <math>n</math> and <math>m</math> are less than 10) to multiply by multiples of 10.</p>

## Number and Operations in Base Ten

### 3.NBT.A Use place value understanding and properties of operations to perform multi-digit arithmetic.

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<p><b>3.NBT.A.1</b></p> <p>Round whole numbers to the nearest 10 or 100 using understanding of place value and use a number line to explain how the number was rounded.</p>	<p>G3 M2 Topic C: Rounding to the Nearest Ten and Hundred</p> <p>G3 M2 Lesson 17: Estimate sums by rounding and apply to solve measurement word problems.</p> <p>G3 M2 Lesson 20: Estimate differences by rounding and apply to solve measurement word problems.</p> <p>G3 M2 Lesson 21: Estimate sums and differences of measurements by rounding, and then solve mixed word problems.</p> <p>G3 M7 Lesson 33: Solidify fluency with Grade 3 skills.</p> <p>G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.</p>
<p><b>3.NBT.A.2</b></p> <p>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.</p>	<p>G3 M2 Lesson 4: Solve word problems involving time intervals within 1 hour by counting backward and forward using the number line and clock.</p> <p>G3 M2 Lesson 5: Solve word problems involving time intervals within 1 hour by adding and subtracting on the number line.</p> <p>G3 M2 Lesson 8: Solve one-step word problems involving metric weights within 100 and estimate to reason about solutions.</p> <p>G3 M2 Lesson 11: Solve mixed word problems involving all four operations with grams, kilograms, liters, and milliliters given in the same units.</p> <p>G3 M2 Topic D: Two- and Three-Digit Measurement Addition Using the Standard Algorithm</p> <p>G3 M2 Topic E: Two- and Three-Digit Measurement Subtraction Using the Standard Algorithm</p> <p>G3 M7 Lesson 33: Solidify fluency with Grade 3 skills.</p> <p>G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.</p>



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<p><b>3.NBT.A.3</b></p> <p>Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., <math>9 \times 80</math>, <math>5 \times 60</math>) using strategies based on place value and properties of operations.</p>	<p>G3 M3 Topic F: Multiplication of Single-Digit Factors and Multiples of 10</p>
<p><b>3.NBT.A.4</b></p> <p>Read and write multi-digit whole numbers (less than or equal to 100,000) using standard form, word form, and expanded form (e.g., 23,456 can be written as <math>20,000 + 3,000 + 400 + 50 + 6</math>).</p>	<p><i>Supplemental material is necessary to address this standard.</i></p>

**Number and Operations—Fractions**

**3.NF.A Develop understanding of fractions as numbers.**

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<p><b>3.NF.A.1</b></p> <p>Understand a unit fraction, <math>\frac{1}{b}</math>, as the quantity formed by 1 part when a whole is partitioned into <math>b</math> equal parts; understand a non-unit fraction, <math>\frac{n}{b}</math>, as the quantity formed by <math>n</math> parts of size <math>\frac{1}{b}</math>.</p>	<p>G3 M5 Topic B: Unit Fractions and their Relation to the Whole</p> <p>G3 M5 Lesson 12: Specify the corresponding whole when presented with one equal part.</p> <p>G3 M7 Lesson 33: Solidify fluency with Grade 3 skills.</p> <p>G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.</p>
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<p><b>3.NF.A.2</b></p> <p>Understand a fraction as a number on the number line. Represent fractions on a number line.</p>	<p>G3 M5 Lesson 14: Place fractions on a number line with endpoints 0 and 1.</p> <p>G3 M5 Lesson 15: Place any fraction on a number line with endpoints 0 and 1.</p> <p>G3 M5 Lesson 18: Compare fractions and whole numbers on the number line by reasoning about their distance from 0.</p> <p>G3 M5 Lesson 30: Partition various wholes precisely into equal parts using a number line method.</p>
<p><b>3.NF.A.2a</b></p> <p>Represent a fraction <math>\frac{1}{b}</math> on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into <math>b</math> equal parts. Recognize that each part has size <math>\frac{1}{b}</math> and that the endpoint locates the number <math>\frac{1}{b}</math> on the number line.</p>	<p>G3 M5 Lesson 30: Partition various wholes precisely into equal parts using a number line method.</p>
<p><b>3.NF.A.2b</b></p> <p>Represent a fraction <math>\frac{n}{b}</math> on a number line diagram by marking off <math>n</math> lengths <math>\frac{1}{b}</math> from 0. Recognize that the resulting interval has size <math>\frac{n}{b}</math> and that its endpoint locates the number <math>\frac{n}{b}</math> on the number line.</p>	<p>G3 M5 Lesson 16: Place whole number fractions and fractions between whole numbers on the number line.</p> <p>G3 M5 Lesson 17: Practice placing various fractions on the number line.</p> <p>G3 M5 Lesson 18: Compare fractions and whole numbers on the number line by reasoning about their distance from 0.</p>
<p><b>3.NF.A.3</b></p> <p>Explain equivalence of fractions and compare fractions by reasoning about their size.</p>	<p>G3 M5 Lesson 10: Compare unit fractions by reasoning about their size using fraction strips.</p> <p>G3 M5 Lesson 11: Compare unit fractions with different-sized models representing the whole.</p> <p>G3 M5 Lesson 13: Identify a shaded fractional part in different ways depending on the designation of the whole.</p> <p>G3 M5 Topic D: Fractions on the Number Line</p> <p>G3 M5 Topic E: Equivalent Fractions</p>

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<p><b>3.NF.A.3 <i>continued</i></b></p>	<p>G3 M5 Lesson 28: Compare fractions with the same numerator pictorially.</p> <p>G3 M5 Lesson 29: Compare fractions with the same numerator using <math>&lt;</math>, <math>&gt;</math>, or <math>=</math>, and use a model to reason about their size.</p>
<p><b>3.NF.A.3a</b></p> <p>Understand two fractions as equivalent (equal) if they are the same size or the same point on a number line.</p>	<p>G3 M5 Topic E: Equivalent Fractions</p>
<p><b>3.NF.A.3b</b></p> <p>Recognize and generate simple equivalent fractions (e.g., <math>\frac{1}{2} = \frac{2}{4}</math>, <math>\frac{4}{6} = \frac{2}{3}</math>) and explain why the fractions are equivalent using a visual fraction model.</p>	<p>G3 M5 Lesson 21: Recognize and show that equivalent fractions refer to the same point on the number line.</p> <p>G3 M5 Lesson 22: Generate simple equivalent fractions by using visual fraction models and the number line.</p> <p>G3 M5 Lesson 23: Generate simple equivalent fractions by using visual fraction models and the number line.</p> <p>G3 M5 Lesson 24: Express whole numbers as fractions and recognize equivalence with different units.</p> <p>G3 M5 Lesson 27: Explain equivalence by manipulating units and reasoning about their size.</p>
<p><b>3.NF.A.3c</b></p> <p>Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers.</p>	<p>G3 M5 Lesson 14: Place fractions on a number line with endpoints 0 and 1.</p> <p>G3 M5 Lesson 15: Place any fraction on a number line with endpoints 0 and 1.</p> <p>G3 M5 Lesson 16: Place whole number fractions and fractions between whole numbers on the number line.</p> <p>G3 M5 Lesson 17: Practice placing various fractions on the number line.</p> <p>G3 M5 Lesson 21: Recognize and show that equivalent fractions refer to the same point on the number line.</p> <p>G3 M5 Lesson 23: Generate simple equivalent fractions by using visual fraction models and the number line.</p>

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<p><b>3.NF.A.3c <i>continued</i></b></p>	<p>G3 M5 Lesson 24: Express whole numbers as fractions and recognize equivalence with different units.</p> <p>G3 M5 Lesson 25: Express whole number fractions on the number line when the unit interval is 1.</p> <p>G3 M5 Lesson 26: Decompose whole number fractions greater than 1 using whole number equivalence with various models.</p> <p>G3 M7 Lesson 33: Solidify fluency with Grade 3 skills.</p>
<p><b>3.NF.A.3d</b></p> <p>Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Use the symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math> to show the relationship and justify the conclusions.</p>	<p>G3 M5 Lesson 10: Compare unit fractions by reasoning about their size using fraction strips.</p> <p>G3 M5 Lesson 11: Compare unit fractions with different-sized models representing the whole.</p> <p>G3 M5 Lesson 13: Identify a shaded fractional part in different ways depending on the designation of the whole.</p> <p>G3 M5 Lesson 18: Compare fractions and whole numbers on the number line by reasoning about their distance from 0.</p> <p>G3 M5 Lesson 19: Understand distance and position on the number line as strategies for comparing fractions.</p> <p>G3 M5 Lesson 28: Compare fractions with the same numerator pictorially.</p> <p>G3 M5 Lesson 29: Compare fractions with the same numerator using <math>&lt;</math>, <math>&gt;</math>, or <math>=</math>, and use a model to reason about their size.</p> <p>G3 M7 Lesson 33: Solidify fluency with Grade 3 skills.</p>

## Measurement and Data

**3.MD.A Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.**

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<p><b>3.MD.A.1</b></p> <p>Solve contextual problems in time and money.</p>	<p><i>Supplemental material is necessary to fully address this standard.</i></p>
<p><b>3.MD.A.1a</b></p> <p>Tell and write time to the nearest minute and measure time intervals in minutes. Solve contextual problems involving addition and subtraction of time intervals in minutes.</p>	<p>G3 M2 Topic A: Time Measurement and Problem Solving</p> <p>G3 M2 Lesson 12: Round two-digit measurements to the nearest ten on the vertical number line.</p> <p>G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.</p>
<p><b>3.MD.A.1b</b></p> <p>Solve one-step contextual problems involving amounts less than one dollar including quarters, dimes, nickels, and pennies using the ¢ symbol appropriately. Solve contextual problems involving whole number dollar amounts up to \$1,000 using the \$ symbol appropriately.</p>	<p><i>Supplemental material is necessary to address this standard.</i></p>
<p><b>3.MD.A.2</b></p> <p>Measure the mass of objects and liquid volume using standard units of grams (g), kilograms (kg), milliliters (ml), and liters (l). Estimate the mass of objects and liquid volume using benchmarks.</p>	<p>G3 M2 Topic B: Measuring Weight and Liquid Volume in Metric Units</p> <p>G3 M2 Lesson 12: Round two-digit measurements to the nearest ten on the vertical number line.</p> <p>G3 M2 Lesson 21: Estimate sums and differences of measurements by rounding, and then solve mixed word problems.</p> <p>G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.</p>

## Measurement and Data

### 3.MD.B Represent and interpret data.

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<p><b>3.MD.B.3</b></p> <p>Draw a pictograph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in graphs.</p>	<p>G3 M6 Topic A: Generate and Analyze Categorical Data</p> <p>G3 M6 Lesson 9: Analyze data to problem solve.</p> <p>G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.</p>
<p><b>3.MD.B.4</b></p> <p>Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units: whole numbers, halves, or quarters.</p>	<p>G3 M6 Topic B: Generate and Analyze Measurement Data</p> <p>G3 M7 Lesson 19: Use a line plot to record the number of rectangles constructed from a given number of unit squares.</p> <p>G3 M7 Lesson 22: Use a line plot to record the number of rectangles constructed in Lessons 20 and 21.</p> <p>G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.</p>

## Measurement and Data

### 3.MD.C Geometric measurement: understand and apply concepts of area and relate area to multiplication and to addition.

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<p><b>3.MD.C.5</b></p> <p>Recognize that plane figures have an area and understand concepts of area measurement.</p>	<p>G3 M4 Topic A: Foundations for Understanding Area</p> <p>G3 M4 Lesson 6: Draw rows and columns to determine the area of a rectangle given an incomplete array.</p>

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<p><b>3.MD.C.5a</b></p> <p>Understand that 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.</p>	<p>G3 M4 Lesson 2: Decompose and recompose shapes to compare areas.</p> <p>G3 M4 Lesson 3: Model tiling with centimeter and inch unit squares as a strategy to measure area.</p> <p>G3 M4 Lesson 4: Relate side lengths with the number of tiles on a side.</p> <p>G3 M4 Lesson 5: Form rectangles by tiling with unit squares to make arrays.</p>
<p><b>3.MD.C.5b</b></p> <p>Understand that a plane figure which can be covered without gaps or overlaps by <math>n</math> unit squares is said to have an area of <math>n</math> square units.</p>	<p>G3 M4 Topic A: Foundations for Understanding Area</p> <p>G3 M4 Lesson 5: Form rectangles by tiling with unit squares to make arrays.</p>
<p><b>3.MD.C.6</b></p> <p>Measure areas by counting unit squares (square centimeters, square meters, square inches, square feet, and improvised units).</p>	<p>G3 M4 Lesson 2: Decompose and recompose shapes to compare areas.</p> <p>G3 M4 Lesson 3: Model tiling with centimeter and inch unit squares as a strategy to measure area.</p> <p>G3 M4 Lesson 4: Relate side lengths with the number of tiles on a side.</p> <p>G3 M4 Lesson 5: Form rectangles by tiling with unit squares to make arrays.</p> <p>G3 M4 Lesson 6: Draw rows and columns to determine the area of a rectangle given an incomplete array.</p> <p>G3 M4 Lesson 7: Interpret area models to form rectangular arrays.</p>
<p><b>3.MD.C.7</b></p> <p>Relate area of rectangles to the operations of multiplication and addition.</p>	<p>G3 M4 Topic B: Concepts of Area Measurement</p> <p>G3 M4 Topic C: Arithmetic Properties Using Area Models</p> <p>G3 M4 Topic D: Applications of Area Using Side Lengths of Figures</p>

**Tennessee Academic Standards  
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**Aligned Components of *Eureka Math***

<p><b>3.MD.C.7a</b></p> <p>Find the area of a rectangle with whole-number side lengths by tiling it and show that the area is the same as would be found by multiplying the side lengths.</p>	<p>G3 M4 Topic B: Concepts of Area Measurement</p> <p>G3 M4 Lesson 9: Analyze different rectangles and reason about their area.</p> <p>G3 M4 Lesson 10: Apply the distributive property as a strategy to find the total area of a large rectangle by adding two products.</p>
<p><b>3.MD.C.7b</b></p> <p>Multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real-world and mathematical problems and represent whole-number products as rectangular areas in mathematical reasoning.</p>	<p>G3 M4 Lesson 8: Find the area of a rectangle through multiplication of the side lengths.</p> <p>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.</p> <p>G3 M4 Lesson 14: Find areas by decomposing into rectangles or completing composite figures to form rectangles.</p> <p>G3 M4 Lesson 15: Apply knowledge of area to determine areas of rooms in a given floor plan.</p> <p>G3 M4 Lesson 16: Apply knowledge of area to determine areas of rooms in a given floor plan.</p> <p>G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.</p>
<p><b>3.MD.C.7c</b></p> <p>Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths <math>a</math> and <math>(b + c)</math> is the sum of <math>(a \times b)</math> and <math>(a \times c)</math>. Use area models to represent the distributive property in mathematical reasoning.</p>	<p>G3 M4 Lesson 9: Analyze different rectangles and reason about their area.</p> <p>G3 M4 Lesson 10: Apply the distributive property as a strategy to find the total area of a large rectangle by adding two products.</p> <p>G3 M4 Lesson 12: Solve word problems involving area.</p>



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<p><b>3.MD.C.7d</b></p> <p>Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real-world problems.</p>	<p>G3 M4 Topic D: Applications of Area Using Side Lengths of Figures</p>
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**Measurement and Data**

**3.MD.D Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.**

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<p><b>3.MD.D.8</b></p> <p>Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exploring rectangles with the same perimeter and different areas or with the same area and different perimeters.</p>	<p>G3 M7 Topic C: Problem Solving with Perimeter</p> <p>G3 M7 Topic D: Recording Perimeter and Area Data on Line Plots</p> <p>G3 M7 Topic E: Problem Solving with Perimeter and Area</p> <p>G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.</p>
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## Geometry

### 3.G.A Reason about shapes and their attributes.

Tennessee Academic Standards for Mathematics	Aligned Components of <i>Eureka Math</i>
<p><b>3.G.A.1</b></p> <p>Understand that shapes in different categories may share attributes and that the shared attributes can define a larger category. Recognize rhombuses, rectangles, and squares as examples of quadrilaterals and recognize examples of quadrilaterals that do not belong to any of these subcategories.</p>	<p>G3 M7 Topic B: Attributes of Two-Dimensional Figures</p> <p>G3 M7 Lesson 34: Create resource booklets to support fluency with Grade 3 skills.</p>
<p><b>3.G.A.2</b></p> <p>Partition shapes into parts with equal areas. Recognize that equal shares of identical wholes need not have the same shape. Express the area of each part as a unit fraction of the whole.</p>	<p>G3 M5 Topic A: Partitioning a Whole into Equal Parts</p> <p>G3 M7 Lesson 31: Explore and create unconventional representations of one-half.</p> <p>G3 M7 Lesson 32: Explore and create unconventional representations of one-half.</p> <p>G3 M7 Lesson 33: Solidify fluency with Grade 3 skills.</p>
<p><b>3.G.A.3</b></p> <p>Determine if a figure is a polygon.</p>	<p>G2 M8 Lesson 1: Describe two-dimensional shapes based on attributes.</p> <p>G2 M8 Lesson 2: Build, identify, and analyze two-dimensional shapes with specified attributes.</p>