## Unifying Concept:
Using the Properties and Solving Problems involving Multiplication and Division

### Enduring Understandings:
- How can I find the total number of objects in equal groups?
- When you divide what do you find?
- How do I know when to use multiplication or division to solve a problem?
- How do drawings and equations help us solve word problems in situations involving equal groups, arrays, and measurement quantities?
- How can we solve for unknown whole numbers in multiplication and division problems? Why is learning this process important to us as mathematical thinkers?
- How does understanding multiplication help solve division problems? What is the relationship between multiplication and division?
- Why is the relationship between multiplication and division important in solving problems using the properties?
- Why is it important to be able to use the associative, distributive, and commutative properties?
- How does understanding the inverse relationship between multiplication and division help you efficiently multiply and divide? What strategies do you know to help you efficiently multiply and divide?
- What is the standard order of operations used for solving word problems with more than one operation?
- How do patterns help us understand our world (music, art, architecture, nature, words, numbers)?

### Essential Questions:
- How can I find the total number of objects in equal groups?
- When you divide what do you find?
- How do I know when to use multiplication or division to solve a problem?
- How do drawings and equations help us solve word problems in situations involving equal groups, arrays, and measurement quantities?
- How can we solve for unknown whole numbers in multiplication and division problems? Why is learning this process important to us as mathematical thinkers?
- How does understanding multiplication help solve division problems? What is the relationship between multiplication and division?
- Why is the relationship between multiplication and division important in solving problems using the properties?
- Why is it important to be able to use the associative, distributive, and commutative properties?
- How does understanding the inverse relationship between multiplication and division help you efficiently multiply and divide? What strategies do you know to help you efficiently multiply and divide?
- What is the standard order of operations used for solving word problems with more than one operation?
- How do patterns help us understand our world (music, art, architecture, nature, words, numbers)?
Mathematics Curriculum Map, Grade 3, Q1

<table>
<thead>
<tr>
<th>Standards for Mathematical Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematically proficient students:</td>
</tr>
<tr>
<td>SMP 1. Make sense of problems and persevere in solving them.</td>
</tr>
<tr>
<td>SMP 2. Reason abstractly and quantitatively.</td>
</tr>
<tr>
<td>SMP 3. Construct viable arguments and critique the reasoning of others.</td>
</tr>
<tr>
<td>SMP 4. Model with mathematics.</td>
</tr>
<tr>
<td>SMP 7. Look for and make use of structure.</td>
</tr>
</tbody>
</table>

**Highly-Leveraged Standards**

- **3.OA.A.1** Interpret products of whole numbers as the total number of objects in equal groups (e.g., interpret 5 x 7 as the total number of objects in 5 groups of 7 objects each).
- **3.OA.A.2** Interpret whole number quotients of whole numbers (e.g., interpret 56 ÷ 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). See Table 2.
- **3.OA.A.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. See Table 2.
- **3.OA.A.4** Determine the unknown whole number in a multiplication or division equation relating three whole numbers For example, determine the unknown number that makes the equation true in each of the equations 8 x \( \square \) = 48, 5 = \( \square \) ÷ 3, 6 x 6 = \( \square \). See Table 2.
- **3.OA.B.5** 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.)
- **3.OA.B.6** Understand division as an unknown-factor problem (e.g., find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8).
- **3.OA.C.7** Fluently multiply and divide within 100. By the end of Grade 3, know from memory all multiplication products through 10 x 10 and division quotients when both the quotient and divisor are less than or equal to 10.
- **3.OA.D.8** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Utilize understanding of the Order of Operations when there are no parentheses.
- **3.OA.D.10** When solving problems, assess the reasonableness of answers using mental computation and estimation strategies including rounding.

**Supporting Standards**

- **3.MD.A.1a** 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).
- **3.MD.A.1b** Solve word problems involving money through $20.00, using symbols $, ".", \( \$ \).
- **3.MD.A.2** Measure and estimate liquid volumes and masses of objects using metric units. (Excludes compound units such as 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”). See Table 2.
### Constant Standards

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.NBT.A.1</td>
<td>Use place value understanding to round whole numbers to the nearest 10 or 100.</td>
</tr>
<tr>
<td>3.NBT.A.2</td>
<td>Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.</td>
</tr>
<tr>
<td>3.OA.C.7</td>
<td>Fluently multiply and divide within 100. By the end of Grade 3, know from memory all multiplication products through 10 x 10 and division quotients when both the quotient and divisor are less than or equal to 10.</td>
</tr>
<tr>
<td>3.OA.D.10</td>
<td>When solving problems, assess the reasonableness of answers using mental computation and estimation strategies including rounding.</td>
</tr>
</tbody>
</table>

### Social Justice Standards

**Identity:**
- ID.3-5.5: I know my family and I do things the same as and different from other people and groups, and I know how to use what I learn from home, school and other places that matter to me.

**Diversity:**
- DI.3-5.7: I have accurate, respectful words to describe how I am similar to and different from people who share my identities and those who have other identities.

**Justice:**
- JU.3-15.12: I know when people are treated unfairly, and I can give examples of prejudice words, pictures and rules.

**Action:**
- AC.3-5.20: I will work with my friends and family to make our school and community fair for everyone, and we will work hard and cooperate in order to achieve our goals.

**Teaching Tolerance Website**
https://www.tolerance.org/
## Adopted Texts and Materials

### Textbook:

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<tr>
<td><strong>Module 1</strong> (25 Days)</td>
</tr>
<tr>
<td><strong>Module 1 PDF</strong></td>
</tr>
<tr>
<td><strong>Module 3</strong> (First 20 Days)</td>
</tr>
<tr>
<td><strong>Module 3 PDF</strong></td>
</tr>
<tr>
<td>Note: Module 2 will be taught in Quarter 2.</td>
</tr>
</tbody>
</table>

### Additional Resources:

- [Illustrative Mathematics](#)
- [Inside Mathematics](#)
- [Learn Zillion](#)
- [NC Mathematics](#) *(choose your grade level on the left)*
- [PBS Learning Media](#)
- [Library of Virtual Manipulatives](#)
- [Nrich Mathematics](#)
- [You Cubed](#)
- [Unpacking Math Standards K-8](#)

## Multicultural/Culturally Responsive Connections

### Culturally Responsive Teaching:

- [TUSD SPARKS](#)
- [SPARKS Strategies](#)

### Modeling in Math Resources:

- [Math Modeling Projects](#)
- [Dan Meyer Three Act Tasks](#)

## Multicultural Math Connections:

- [Global Math Stories](#)
- [Lessons from the Mayas](#)
- [Multicultural Education and Math](#)
- [Multicultural Mathematics](#)
- [Teaching Mathematics through Multicultural Literature](#)
- [Integrating Mathematics of Worldwide Cultures into K-12 Instruction](#)
- [A Course in Multicultural Mathematics](#)
- [Critical Multicultural Pavilion: Links to Sites for Multicultural Education and Math](#)

## Instructional and Assessment Guides

### Additional Instructional Resources

- [The Mathematics Common Core Toolbox](#)
- [Inside Mathematics: Tools for Educators](#)
- [MARS Lessons](#)
- [Achieve the Core](#)
- [Standards Toolkit](#)
- [Math Vocabulary](#)
- [ADE Mathematics Glossary](#)

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### Unifying Concept:
#### Geometric Measurement: Understanding Concepts of Area and Perimeter

<table>
<thead>
<tr>
<th>Enduring Understandings</th>
<th>Essential Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Understanding the base-ten number system and how numbers can be manipulated helps</td>
<td>• How can understanding place value help you multiply in an efficient manner?</td>
</tr>
<tr>
<td>develop students’ problem-solving skills and number sense.</td>
<td>• What does the area of a 2 dimensional figure represent?</td>
</tr>
<tr>
<td>• What we measure influences how we measure.</td>
<td>• What is an efficient strategy to determine the area of a 2 dimensional figure?</td>
</tr>
<tr>
<td>• A square unit is a square with a side length of 1 unit. Understanding how to</td>
<td>• Why is the area of a rectangle the same whether it is found by tiling or by</td>
</tr>
<tr>
<td>spatially structure a two-dimensional region by tiling it with unit squares is</td>
<td>multiplying the length by the width?</td>
</tr>
<tr>
<td>an important step to the learning about area. These ideas connect to arrays in</td>
<td>• What are some examples of real world situations involving the area of a</td>
</tr>
<tr>
<td>multiplication.</td>
<td>rectangle?</td>
</tr>
<tr>
<td>• Understanding the area of a rectangle can help us in many real-world situations/</td>
<td>• What are some situations in which you would decompose a rectangle into two</td>
</tr>
<tr>
<td>applications. Ex: carpeting a floor, building a brick walkway, painting a wall,</td>
<td>smaller rectangles to find the area?</td>
</tr>
<tr>
<td>making a tablecloth, or tiling a bathroom.</td>
<td>• What are different ways you can find the area of a rectilinear shape without</td>
</tr>
<tr>
<td>• Decomposing regions into smaller areas can be useful when working with real-world</td>
<td>counting square units?</td>
</tr>
<tr>
<td>contextual situations.</td>
<td>• How does a digit’s position affect its value?</td>
</tr>
<tr>
<td>• Not all things in everyday life are shaped like squares or rectangles. Dividing</td>
<td>• How can understanding place value help you add or subtract in an efficient</td>
</tr>
<tr>
<td>irregular shapes into rectangles and squares helps us to find the areas of real-life</td>
<td>manner?</td>
</tr>
<tr>
<td>objects/situations.</td>
<td>• Why is telling time to the minute important?</td>
</tr>
<tr>
<td>• Rounding numbers can help create easier numbers to work with for mental math and</td>
<td>• How does estimating liquid volume and masses of objects help you with measuring</td>
</tr>
<tr>
<td>paper/pencil computations by using estimation and checking for the reasonableness of</td>
<td>these attributes?</td>
</tr>
<tr>
<td>answers.</td>
<td>• When is it appropriate to estimate versus using a standard unit of measure?</td>
</tr>
<tr>
<td>• Deep understanding of place value is needed to use the 4 operations and solve</td>
<td></td>
</tr>
<tr>
<td>arithmetic problems.</td>
<td></td>
</tr>
<tr>
<td>• Telling and writing time is essential to maintain a routine and schedule of daily</td>
<td></td>
</tr>
<tr>
<td>activities. Measuring time intervals applies and extends these understandings.</td>
<td></td>
</tr>
<tr>
<td>• Reasoning about the units of mass and volume develops an understanding of the size</td>
<td></td>
</tr>
<tr>
<td>and weight of a liter, a gram, and a kilogram, and allows students to apply this to</td>
<td></td>
</tr>
<tr>
<td>contextual situations.</td>
<td></td>
</tr>
</tbody>
</table>
Standards for Mathematical Practice

<table>
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<th>Mathematical Practices Poster</th>
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<tbody>
<tr>
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<td></td>
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</tr>
<tr>
<td>SMP 3.</td>
<td>Construct viable arguments and critique the reasoning of others.</td>
</tr>
<tr>
<td>SMP 6.</td>
<td>Attend to precision.</td>
</tr>
<tr>
<td>SMP 7.</td>
<td>Look for and make use of structure.</td>
</tr>
<tr>
<td>SMP 8.</td>
<td>Look for and express regularity in repeated reasoning.</td>
</tr>
</tbody>
</table>

**Highly-Leveraged Standards**

**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.
- b. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.

**3.MD.C.6** Measure areas by counting unit squares (e.g., square cm, square m, square in, square ft, and improvised units).

**3.MD.C.7** Relate area to the operations of multiplication and addition.
- a. 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.
- b. 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.
- 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 × b and a × c. Use area models to represent the distributive property in mathematical reasoning.
- 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 real-world contexts.

**3.OA.A.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. See Table 2.

**3.OA.A.4** Determine the unknown whole number in a multiplication or division equation relating three whole numbers For example, determine the unknown number that makes the equation true in each of the equations 8 × □ = 48, 5 = □ ÷ 3, 6 × 6 = □. See Table 2.

**3.OA.B.5** 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.)

**3.OA.C.7** Fluently multiply and divide within 100. By the end of Grade 3, know from memory all multiplication products through 10 × 10 and division quotients when both the quotient and divisor are less than or equal to 10.

**3.OA.D.8** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Utilize understanding of the Order of Operations when there are no parentheses.

**3.OA.D.9** Identify patterns in the addition table and the multiplication table and explain them using properties of operations (e.g. observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends).
Supporting Standards

3.MD.A.1a 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).

3.MD.A.1b Solve word problems involving money through $20.00, using symbols $, ".", \(\text{¢}\).

3.MD.A.2 Measure and estimate liquid volumes and masses of objects using metric units. (Excludes compound units such as 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”). See Table 2.

3.NBT.A.1 Use place value understanding to round whole numbers to the nearest 10 or 100.

3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

3.NBT.A.3 Multiply one-digit whole numbers by multiples of 10 in the range 10 to 90 using strategies based on place value and the properties of operations (e.g., 9 x 80, 5 x 60).

Constant Standards

3.NBT.A.1 Use place value understanding to round whole numbers to the nearest 10 or 100.

3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

3.OA.C.7 Fluently multiply and divide within 100. By the end of Grade 3, know from memory all multiplication products through 10 x 10 and division quotients when both the quotient and divisor are less than or equal to 10.

3.OA.D.10 When solving problems, assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Social Justice Standards

Identity:
- ID.3-5.5: I know my family and I do things the same as and different from other people and groups, and I know how to use what I learn from home, school and other places that matter to me.

Diversity:
- DI.3-5.7: I have accurate, respectful words to describe how I am similar to and different from people who share my identities and those who have other identities.

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Action:
- AC.3-5.20: I will work with my friends and family to make our school and community fair for everyone, and we will work hard and cooperate in order to achieve our goals.

Teaching Tolerance Website
https://www.tolerance.org/
# 2019-2020 Mathematics Curriculum Map, Grade 3, Q2

## Adopted Texts and Materials

### Textbook:

- **Eureka Math / Engage NY:**
  - Module 3 (Last 5 Days)
  - Module 3 PDF
  - Module 2 (25 Days)
  - Module 2 PDF
  - Module 4 (First 16 Days)
  - Module 4 PDF

### Additional Resources:

- [Illustrative Mathematics](#)
- [Inside Mathematics](#)
- [Learn Zillion](#)
- [NC Mathematics](#) *(choose your grade level on the left)*
- [PBS Learning Media](#)
- [Library of Virtual Manipulatives](#)
- [Nrich Mathematics](#)
- [You Cubed](#)
- [Unpacking Math Standards K-8](#)

## Multicultural/Culturally Responsive Connections

### Culturally Responsive Teaching:

- [TUSD SPARKS](#)
- [SPARKS Strategies](#)

### Modeling in Math Resources:

- [Math Modeling Projects](#)
- [Dan Meyer Three Act Tasks](#)
- [http://robertkaplinsky.com/lessons/](#)

### Multicultural Math Connections:

- [Global Math Stories](#)
- [Lessons from the Mayas](#)
- [Multicultural Education and Math](#)
- [Multicultural Mathematics](#)
- [Teaching Mathematics through Multicultural Literature](#)
- [Integrating Mathematics of Worldwide Cultures into K-12 Instruction](#)
- [A Course in Multicultural Mathematics](#)
- [Critical Multicultural Pavilion: Links to Sites for Multicultural Education and Math](#)

## Instructional and Assessment Guides

### Instructional and Assessment Guides:

- [TUSD SPARKS](#)
- [SPARKS Strategies](#)
- [DOK Levels](#)
- [DOK Stems](#)
- [Hess's Matrix](#)
- [Bloom's Taxonomy](#)
- [Table 1](#)

### Additional Instructional Resources:

- [The Mathematics Common Core Toolbox](#)
- [Inside Mathematics: Tools for Educators](#)
- [MARS Lessons](#)
- [Achieve the Core](#)
- [Standards Toolkit](#)
- [Math Vocabulary](#)
- [ADE Mathematics Glossary](#)
### Unifying Concept:
Understanding Fractions as Numbers

<table>
<thead>
<tr>
<th>Enduring Understandings:</th>
<th>Essential Questions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Fractions are numbers that are part of a whole.</td>
<td>- How do fractions differ from a whole numbers?</td>
</tr>
<tr>
<td>- Fractions are numbers and represent a quantity. Fractions are the numbers between whole numbers and can be represented in a variety of ways.</td>
<td>- What relationships can you find between fractions when using a number line?</td>
</tr>
<tr>
<td>- Equivalent fractions are the same size and represent the same point on a number line. Being able to identify equivalent fractions is necessary when comparing fractions and adding or subtracting fractions.</td>
<td>- How can two fractions have the same value?</td>
</tr>
<tr>
<td>- Using visual models helps to compare two fractions.</td>
<td>- What is the purpose of understanding equivalent fractions? When might you use equivalent fractions?</td>
</tr>
<tr>
<td>- By partitioning shapes into equal parts and expressing these parts as a unit fraction, students are making connections between geometric figures and fractions.</td>
<td>- How do you represent a whole number as a fraction? When might you use an equivalent fraction of a whole number?</td>
</tr>
<tr>
<td>-</td>
<td>- How many different ways can you partition a shape into equal regions with the same area? What are the unit fraction names for these parts?</td>
</tr>
</tbody>
</table>

### Standards

#### Standards for Mathematical Practice

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<th>Mathematically proficient students:</th>
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<td>SMP 6. Attend to precision.</td>
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<td></td>
</tr>
</tbody>
</table>

[Mathematical Practices Poster](#)

#### Highly-Leveraged Standards

1. **3.NF.A.1** Understand a fraction (1/b) as the quantity formed by one part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.

2. **3.NF.A.2** Understand a fraction as a number on the number line; represent fractions on a number line diagram.
   - Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Understand that each part has size 1/b and that the end point of the part based at 0 locates the number 1/b on the number line.
   - Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Understand that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line including values greater than 1.
   - Understand a fraction 1/b as a special type of fraction can be referred to as a unit fraction (e.g. 1/2, 1/4).

3. **3.NF.A.3** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
   - Understand two fractions as equivalent if they have the same relative size compared to 1 whole.
b. Recognize and generate simple equivalent fractions. Explain why the fractions are equivalent.
c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.
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.

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.
b. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.

3.MD.C.6 Measure areas by counting unit squares (e.g., square cm, square m, square in, square ft, and improvised units).

3.MD.C.7 Relate area to the operations of multiplication and addition.
a. 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.
b. 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.
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.
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 real-world contexts.

### Supporting Standards

- **3.G.A.2** Partition shapes into $b$ parts with equal areas. Express the area of each part as a unit fraction $1/b$ of the whole. (Grade 3 expectations are limited to fractions with denominators $b = 2, 3, 4, 6, 8$.)

- **3.MD.B.3** Create a scaled picture graph 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 scaled bar graphs. See Table 1.

- **3.MD.B.4** Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch to the nearest quarter-inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.

### Constant Standards

- **3.NBT.A.1** Use place value understanding to round whole numbers to the nearest 10 or 100.

- **3.NBT.A.2** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

- **3.OA.C.7** 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.

- **3.OA.D.10** When solving problems, assess the reasonableness of answers using mental computation and estimation strategies including rounding.
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#### Teaching Tolerance Website
[https://www.tolerance.org/](https://www.tolerance.org/)

### Adopted Texts and Materials

#### Textbook:
- **Eureka Math / Engage NY:**
  - Module 4 (Last 4 Days)
  - Module 4 PDF
  - Module 5 (35 Days)
  - Module 5 PDF
  - Module 6 (First 7 Days)
  - Module 6 PDF

#### Additional Resources:
- Illustrative Mathematics
- Inside Mathematics
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<td>• Hess's Matrix</td>
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<td>• Bloom's Taxonomy</td>
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<td>• Table 1</td>
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<td><strong>Additional Instructional Resources</strong></td>
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<tr>
<td>• The Mathematics Common Core Toolbox</td>
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<td>• Inside Mathematics: Tools for Educators</td>
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<td>• MARS Lessons</td>
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<td>• Achieve the Core</td>
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<td>• Standards Toolkit</td>
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<td>• Math Vocabulary</td>
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<td>• ADE Mathematics Glossary</td>
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### Unifying Concept: Geometry, Measurement and Data

#### Enduring Understandings:
- Graph and Plots are used to represent measured and estimated data.
- Graphing can be used as an efficient way of explaining and comparing results, trends, and the frequency of occurrences.
- What we measure influences how we measure.
- Area and perimeter are important for enhancing geometric knowledge. Perimeter is an attribute of plane figures.
- Shapes describe patterns and reason in the physical world.
- Shapes can be compared by their attributes, such as the number of sides or angles.

#### Essential Question:
- Why is accuracy important when drawing a graph or line plot?
- How do you read the data represented on a scaled bar or scaled picture graph, and how can we use that data to compare information?
- What does the perimeter of a polygon (2 dimensional figure) represent?
- What type of problem would require the use of area and perimeter as a solution?
- How is the perimeter of a polygon calculated given the length of its sides?
- How is the unknown length of a side of a rectangle determined?
- What is a quadrilateral?
- How do different quadrilaterals relate to each other? How are they similar, how are they different?

### Standards

#### Standards for Mathematical Practice

Mathematically proficient students:
- SMP 1: Make sense of problems and persevere in solving them.
- SMP 3: Construct viable arguments and critique the reasoning of others.
- SMP 5: Use appropriate tools strategically.
- SMP 6: Attend to precision.

[Mathematical Practices Poster](#)

#### Highly-Leveraged Standards

- **3.MD.C.8** 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.
- **3.OA.D.8** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Utilize understanding of the Order of Operations when there are no parentheses.

#### Supporting Standards

- **3.G.A.1** 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.
3.MD.B.3 Create a scaled picture graph 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 scaled bar graphs. See Table 1.
3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch to the nearest quarter-inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.

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<th>Constant Standards</th>
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<tbody>
<tr>
<td>3.NBT.A.1 Use place value understanding to round whole numbers to the nearest 10 or 100.</td>
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<tr>
<td>3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.</td>
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<tr>
<td>3.OA.C.7 Fluently multiply and divide within 100. By the end of Grade 3, know from memory all multiplication products through 10 x 10 and division quotients when both the quotient and divisor are less than or equal to 10.</td>
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<tr>
<td>3.OA.D.10 When solving problems, assess the reasonableness of answers using mental computation and estimation strategies including rounding.</td>
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<td>Identity:</td>
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<tr>
<td>• ID.3-5.5: I know my family and I do things the same as and different from other people and groups, and I know how to use what I learn from home, school and other places that matter to me.</td>
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<td>Diversity:</td>
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<td>• DI.3-5.7: I have accurate, respectful words to describe how I am similar to and different from people who share my identities and those who have other identities.</td>
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<tr>
<td>Justice:</td>
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<tr>
<td>• JU.3-15.12: I know when people are treated unfairly, and I can give examples of prejudice words, pictures and rules.</td>
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<tr>
<td>Action:</td>
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<tr>
<td>• AC.3-5.20: I will work with my friends and family to make our school and community fair for everyone, and we will work hard and cooperate in order to achieve our goals.</td>
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Teaching Tolerance Website
https://www.tolerance.org/
# 2019-2020 Mathematics Curriculum Map, Grade 3, Q4

## Adopted Texts and Materials

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<th>Textbook:</th>
<th>Additional Resources:</th>
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<tr>
<td><strong>Eureka Math / Engage NY:</strong> Module 6 (Last 3 Days) Module 6 PDF Module 7 (40 Days) Module 7 PDF</td>
<td><strong>Illustrative Mathematics</strong>&lt;br&gt;<strong>Inside Mathematics</strong>&lt;br&gt;<strong>Learn Zillion</strong>&lt;br&gt;<strong>NC Mathematics</strong> <em>(choose your grade level on the left)</em>&lt;br&gt;<strong>PBS Learning Media</strong>&lt;br&gt;<strong>Library of Virtual Manipulatives</strong>&lt;br&gt;<strong>Nrich Mathematics</strong>&lt;br&gt;<strong>You Cubed</strong>&lt;br&gt;<strong>Unpacking Math Standards K-8</strong></td>
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## Culturally Responsive Teaching:

- **TUSD SPARKS**
- **SPARKS Strategies**

## Multicultural Math Connections:

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- **A Course in Multicultural Mathematics**
- **Critical Multicultural Pavilion: Links to Sites for Multicultural Education and Math**

## Modeling in Math Resources:

- **Math Modeling Projects**
- **Dan Meyer Three Act Tasks**
• **Highly-Leveraged Standards** are essential knowledge and skills that are emphasized during the quarter because they have endurance (relevant throughout a student’s lifetime); leverage (used across multiple content areas); and are necessary for success in future grade levels. Mastery of these standards is measured using classroom and/or benchmark assessments. Specifically for mathematics, the **Highly-Leveraged Standards** are the **Major Content/Clusters** as defined by the Arizona Math Standards Content Emphasis Document. They should encompass a range of at least 65%-75% of instruction. See the Grade Level Focus documents at: https://cms.azed.gov/home/GetDocumentFile?id=5994c1b73217e11164e2b109

• **Supporting Standards** are integral to achieve grade-level mastery. Mastery of these standards is measured using classroom and/or benchmark assessments.

• **Constant Standards** are routinely addressed to reinforce grade-level mastery.