

MOBILE COUNTY PUBLIC SCHOOLS  
 DIVISION OF CURRICULUM & INSTRUCTION  
 THIRD GRADE MATHEMATICS INSTRUCTIONAL PLANNING GUIDE  
 2017-2018: QTR 4

Qtr. 4: Weeks 1-3  
 March 20 - April 12 (13 days)  
 Grade 3 Unit 10 Measurement and Geometry

**UNIT OVERVIEW: MEASUREMENT AND GEOMETRY**

In this unit, students will further their understanding of addition, subtraction, multiplication & division and the relationship between the four operations and their application to real-world problems involving measurement and attributes of shapes.

**ESSENTIAL QUESTIONS:**

- How do you measure the mass of an object?
- How do attributes help to identify different shapes?
- Is it possible to have a shape that fits into more than one category?
- What does it mean to partition a shape into parts?

**KEY VOCABULARY:**

estimate, measure, liquid volume, mass, standard units, metric, gram (g), kilogram (kg), liter (L), milliliter (mL), attribute, perimeter, plane figure, linear, area, polygon, side length, properties, attributes, features, quadrilateral, open figure, closed figure, three-sided, 2-dimensional, rectangle, polygon, rhombus/rhombi, square, partition, unit fraction, kite, parallelogram, right angle, triangle, quadrilateral, pentagon, hexagon, trapezoid, half/quarter circle, circle, sides, vertices/vertex, corners

**Standards/Objectives**

**Opportunity for Depth Standards**

**Standards Clarification**

**[3-MD.2]** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (L). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.

**[3-MD.2]** Measure volume/mass; use as a context for word problems.

**[3-MD.8]** Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

**[3-MD.8]** Real-world problems, connect perimeter & area.

**[3-OA.7]** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that  $8 \times 5 = 40$ , one knows  $40 \div 5 = 8$ ) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

**[3-OA.7] Instructional focus on: All Facts - BUILDING FLUENCY  
 \*NO HAND TRICKS\***

*Basic Fact Assessment – Multiplication factors 0-9*

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Supporting Standards	Standards Clarification		
<p><b>[3-G.1]</b> 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).</p> <ul style="list-style-type: none"> <li>Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.</li> </ul>	<p><b>[3-G.1]</b> Categorize shapes by attribute (examples and non-examples).</p>		
<p><b>[3-G.2]</b> Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.</p> <ul style="list-style-type: none"> <li>Example: Partition a shape into 4 parts with equal area, and describe the area of each part as <math>\frac{1}{4}</math> of the area of the shape.</li> </ul>	<p><b>[3-G.2]</b> Partition shapes into parts with equal areas/express area as a unit fraction.</p>		
<b>Continued not new</b>			
<p><b>NF1, NF2, NF3, MD3, MD4, MD5, MD6, MD7</b> Continue for reinforcement and review.</p>			
<b>Resources for Quarter 4 Unit 10</b>			
<p><b>Engage New York Module 2 Topic B - (MD2)</b>  <a href="https://www.engageny.org/resource/grade-3-mathematics-module-2">https://www.engageny.org/resource/grade-3-mathematics-module-2</a></p> <p><b>Module 5 Topic C – (G2)</b>  <a href="https://www.engageny.org/resource/grade-3-mathematics-module-5">https://www.engageny.org/resource/grade-3-mathematics-module-5</a></p> <p><b>Module 7 Topic B , C, D – (G1, MD8)</b>  <a href="https://www.engageny.org/resource/grade-3-mathematics-module-7">https://www.engageny.org/resource/grade-3-mathematics-module-7</a></p>	<p><b>Georgia Standards Unit 4 – (G1, G2, MD8)</b>  <a href="https://www.georgiastandards.org/Georgia-Standards/Frameworks/3rd-Math-Unit-4.pdf">https://www.georgiastandards.org/Georgia-Standards/Frameworks/3rd-Math-Unit-4.pdf</a></p> <p><b>Unit 6 – (MD2)</b>  <a href="https://www.georgiastandards.org/Georgia-Standards/Frameworks/3rd-Math-Unit-6.pdf">https://www.georgiastandards.org/Georgia-Standards/Frameworks/3rd-Math-Unit-6.pdf</a></p> <ul style="list-style-type: none"> <li><b>How Many Paper Clips?</b></li> <li><b>Setting the Standard</b></li> <li><b>Making a Kilogram</b></li> <li><b>Worth the Weight</b></li> <li><b>Fill It Up!</b></li> <li><b>More Punch Please!</b></li> </ul>	<p><b>Howard County</b>  <b>G1</b>  <a href="https://hcpss.instructure.com/courses/97/pages/3-dot-g-1-about-the-math-learning-targets-and-rigor">https://hcpss.instructure.com/courses/97/pages/3-dot-g-1-about-the-math-learning-targets-and-rigor</a></p> <p><b>G2</b>  <a href="https://hcpss.instructure.com/courses/97/pages/3-dot-g-2-about-the-math-learning-targets-and-rigor">https://hcpss.instructure.com/courses/97/pages/3-dot-g-2-about-the-math-learning-targets-and-rigor</a></p>	<p><b>Math In Focus</b>  <b>Chapter 18 Lesson 1 – (G1)</b>  <b>Chapter 14 Lesson 6 – (G2)</b>  <b>Chapter 11 Lessons 3 and 4 – (MD2)</b>  <b>Chapter 12 Lessons 1 and 2 – (MD2)</b>  <b>Chapter 19 – (MD8)</b></p>

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<b>FAL: <i>Attributes of a Shape – (G1)</i></b> <a href="http://education.ky.gov/curriculum/connopro/Math/Documents/3_KDE_Geometry_Attributes_of_Shapes_Grade_3.pdf">http://education.ky.gov/curriculum/connopro/Math/Documents/3_KDE_Geometry_Attributes_of_Shapes_Grade_3.pdf</a>	<b>FAL: <i>Attributes of a Shape – (G1)</i></b> <a href="http://education.ky.gov/curriculum/connopro/Math/Documents/3_KDE_Geometry_Attributes_of_Shapes_Grade_3.pdf">http://education.ky.gov/curriculum/connopro/Math/Documents/3_KDE_Geometry_Attributes_of_Shapes_Grade_3.pdf</a>	<b>FAL: <i>Attributes of a Shape – (G1)</i></b> <a href="http://education.ky.gov/curriculum/connopro/Math/Documents/3_KDE_Geometry_Attributes_of_Shapes_Grade_3.pdf">http://education.ky.gov/curriculum/connopro/Math/Documents/3_KDE_Geometry_Attributes_of_Shapes_Grade_3.pdf</a>	<b>FAL: <i>Attributes of a Shape – (G1)</i></b> <a href="http://education.ky.gov/curriculum/connopro/Math/Documents/3_KDE_Geometry_Attributes_of_Shapes_Grade_3.pdf">http://education.ky.gov/curriculum/connopro/Math/Documents/3_KDE_Geometry_Attributes_of_Shapes_Grade_3.pdf</a>
<b>Xtra Math</b> <a href="https://xtramath.org/#/home/index">https://xtramath.org/#/home/index</a> <i>Free, individualized web based program that helps to build student fluency.</i>			
<b>Focus Standards for Mathematical Practice</b>			
MP.7 Look for and make use of structure.			
MP.8 Look for and express regularity in repeated reasoning.			

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Qtr. 4: Weeks 4-6

April 13 - May 2 (14 days)

**Grade 3 Unit 11: Time and Word Problems**

**UNIT OVERVIEW: TIME AND WORD PROBLEMS**

In this unit, students will be able to solve word problems involving two steps, as well as words problems with time intervals.

**ESSENTIAL QUESTIONS:**

How can I use what I know about number lines to help me figure out how much time has passed between two events?  
 How can you tell when you need to answer more than one question to solve a problem?  
 How can you solve problems that involves more than one step?

**KEY VOCABULARY:**

time, time intervals, minute, hour, elapsed time, operation, multiply, divide, factor, product, quotient, unknown, strategies, reasonableness, mental computation, property

**Standards/Objectives**

**Mastery Standards**

**Standards Clarification**

**[3-OA.8]** Solve two-step word 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.

**[3-OA.8]** Two step problems, addition or subtraction situation, with a multiplication or division situation. Use a letter to represent the unknown quantity (connect model and equation as needed) - **assess the reasonableness of answers.**

**[3-MD.1]** 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., by representing the problem on a number line diagram.

**[3-MD.1]** Solve word problems with time including the use of a number line diagram.

**Opportunity for Depth Standards**

**Standards Clarification**

**[3-OA.3]** Use multiplication and division within 100 to solve word problems in situations involving equal groups and arrays, e.g., by using drawings and equations with a symbol for the unknown number to represent the quantities.

**[3-OA.3]** Multiplication & Division word problems (all 4 types required for 3<sup>rd</sup> grade).

**[3-OA.7]** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that  $8 \times 5 = 40$ , one knows  $40 \div 5 = 8$ ) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

**[3-OA.7] Instructional focus on: All Facts - BUILDING FLUENCY  
 \*NO HAND TRICKS\***

*Basic Fact Assessment – Multiplication factors 0-9*

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**Resources for Quarter 4 Unit 11**

<p>Engage New York Module 2 Topic C - (MD1)  <a href="https://www.engageny.org/resource/grade-3-mathematics-module-2">https://www.engageny.org/resource/grade-3-mathematics-module-2</a></p> <p>Module 3 Topic C, D – (OA3)  <a href="https://www.engageny.org/resource/grade-3-mathematics-module-3">https://www.engageny.org/resource/grade-3-mathematics-module-3</a></p> <p>Module 7 Topic A – (OA8)  <a href="https://www.engageny.org/resource/grade-3-mathematics-module-7">https://www.engageny.org/resource/grade-3-mathematics-module-7</a></p>	<p>Georgia Standards Unit 2 – (OA3)  <a href="https://www.georgiastandards.org/Georgia-Standards/Frameworks/3rd-Math-Unit-2.pdf">https://www.georgiastandards.org/Georgia-Standards/Frameworks/3rd-Math-Unit-2.pdf</a></p> <ul style="list-style-type: none"> <li>• Skittles Cupcake Combos</li> <li>• Sharing Pumpkin Seeds</li> <li>• Field Day Blunder</li> </ul> <p>Unit 3 – (OA8)  <a href="https://www.georgiastandards.org/Georgia-Standards/Frameworks/3rd-Math-Unit-3.pdf">https://www.georgiastandards.org/Georgia-Standards/Frameworks/3rd-Math-Unit-3.pdf</a></p> <ul style="list-style-type: none"> <li>• Read all About It</li> <li>• It Takes Two!</li> <li>• Hooked on Solutions!</li> </ul> <p>Unit 6 – (MD1)  <a href="https://www.georgiastandards.org/Georgia-Standards/Frameworks/3rd-Math-Unit-6.pdf">https://www.georgiastandards.org/Georgia-Standards/Frameworks/3rd-Math-Unit-6.pdf</a></p> <ul style="list-style-type: none"> <li>• Let’s Talk Time About Time</li> <li>• Time to Get Clean</li> <li>• Daily Schedule</li> <li>• Plane Ride</li> <li>• How Do I Spend My Day?</li> <li>• Field Trip to the Zoo</li> </ul>	<p>Howard County        MD1  <a href="https://hcpss.instructure.com/courses/97/pages/3-dot-md-dot-1-about-the-math-learning-targets-and-rigor">https://hcpss.instructure.com/courses/97/pages/3-dot-md-dot-1-about-the-math-learning-targets-and-rigor</a>        OA3  <a href="https://hcpss.instructure.com/courses/97/pages/3-dot-oa-dot-3-about-the-math-learning-targets-and-rigor">https://hcpss.instructure.com/courses/97/pages/3-dot-oa-dot-3-about-the-math-learning-targets-and-rigor</a>        OA8  <a href="https://hcpss.instructure.com/courses/97/pages/3-dot-oa-dot-8-about-the-math-learning-targets-and-rigor">https://hcpss.instructure.com/courses/97/pages/3-dot-oa-dot-8-about-the-math-learning-targets-and-rigor</a></p>	<p>Math In Focus        Chapter 16 Lessons 1-4 – (MD1)        Chapter 6 – (OA3)        Chapter 9 – (OA8)</p>
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**Focus Standards for Mathematical Practice**

MP.7 Look for and make use of structure.

MP.8 Look for and express regularity in repeated reasoning.

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Qtr. 4: Weeks 7-9

May 3 – May 24 (16 Days)

**Grade 3 Unit 12: The Relationship Between Multiplication and Division**

**UNIT OVERVIEW: THE RELATIONSHIP BETWEEN MULTIPLICATION AND DIVISION**

In this unit, students will further their understanding of addition, subtraction, multiplication & division and the relationship between the four operations

**ESSENTIAL QUESTIONS:**

How does understanding the properties of operations help us multiply numbers?

How can you describe a problem situation using an equation?

**KEY VOCABULARY:**

products, groups of, quotients, partitioned equally, multiplication, division, equal groups, group size, arrays, equations, unknown, expression, operation, multiply, divide, factor, product, quotient, unknown, strategies

**Standards/Objectives**

**Mastery Standards**

**Standards Clarification**

**[3-OA.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  $8 \times \square = 48$ ,  $5 = \square \div 3$ ,  $6 \times 6 = \square$

**[3-OA.4]** Unknown whole in multiplication/division.

**[3-OA.5]** Apply properties of operations as strategies to multiply and divide.

- If  $6 \times 4 = 24$  is known, then  $4 \times 6 = 24$  is also known. (**Commutative property of multiplication**)
- $3 \times 5 \times 2$  can be found by  $3 \times 5 = 15$ , then  $15 \times 2 = 30$ , or by  $5 \times 2 = 10$ , then  $3 \times 10 = 30$ . (**Associative property of multiplication**)
- Knowing that  $8 \times 5 = 40$  and  $8 \times 2 = 16$ , one can find  $8 \times 7$  as  $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$ . (**Distributive property**)

**[3-OA.5]** Commutative, distributive, and associative properties.

**[3-OA.6]** Understand division as an unknown factor-problem.

- For example, find  $32 \div 8$  by finding the number that makes 32 when multiplied by 8.

**[3-OA.6]** Division as an unknown factor.

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Opportunity for Depth Standards	Standards Clarification
[3-OA.7] Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$ , one knows $40 \div 5 = 8$ ) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	[3-OA.7] Instructional focus on: <b>All Facts - BUILDING FLUENCY</b> <b>*NO HAND TRICKS*</b>  <i>Basic Fact Assessment – Multiplication factors 0-9</i>

Continued not new

NBT1, NBT2, NBT3, OA1, OA2, OA9 Continue for reinforcement and review

Resources for Quarter 4 Unit 12

<p>Engage New York Module 1 Topic F - (OA5, OA6, OA7)  <a href="https://www.engageny.org/resource/grade-3-mathematics-module-1">https://www.engageny.org/resource/grade-3-mathematics-module-1</a></p> <p>Module 3 Topic D, E, F – (OA4, OA5, OA7)  <a href="https://www.engageny.org/resource/grade-3-mathematics-module-3">https://www.engageny.org/resource/grade-3-mathematics-module-3</a></p>	<p>Georgia Standards Unit 2 – (OA4, OA5, OA6, OA7)  <a href="https://www.georgiastandards.org/Georgia-Standards/Frameworks/3rd-Math-Unit-2.pdf">https://www.georgiastandards.org/Georgia-Standards/Frameworks/3rd-Math-Unit-2.pdf</a></p> <ul style="list-style-type: none"> <li>• Arrays on the Farm</li> <li>• Family Reunion</li> <li>• Seating Arrangements</li> <li>• What Comes First, the Chicken or the Egg</li> <li>• Use What You Know</li> <li>• Multiplication Chart Mastery</li> <li>• Making the “Hard” Facts Easy</li> <li>• Making up Multiplication</li> <li>• My Special Day</li> <li>• Ice Cream Scoops</li> </ul>	<p>Howards County          OA4  <a href="https://hcpss.instructure.com/courses/97/pages/3-dot-oa-dot-4-about-the-math-learning-targets-and-rigor">https://hcpss.instructure.com/courses/97/pages/3-dot-oa-dot-4-about-the-math-learning-targets-and-rigor</a>          OA5  <a href="https://hcpss.instructure.com/courses/97/pages/3-dot-oa-dot-5-about-the-math-learning-targets-and-rigor">https://hcpss.instructure.com/courses/97/pages/3-dot-oa-dot-5-about-the-math-learning-targets-and-rigor</a>          OA 6  <a href="https://hcpss.instructure.com/courses/97/pages/3-dot-oa-dot-6-about-the-math-learning-targets-and-rigor">https://hcpss.instructure.com/courses/97/pages/3-dot-oa-dot-6-about-the-math-learning-targets-and-rigor</a>          OA7  <a href="https://hcpss.instructure.com/courses/97/pages/3-dot-oa-dot-7-about-the-math-learning-targets-and-rigor">https://hcpss.instructure.com/courses/97/pages/3-dot-oa-dot-7-about-the-math-learning-targets-and-rigor</a></p>	<p>Math In Focus          Chapter 6, 7, 8 – (OA4, OA5, OA6, OA7)</p>
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Focus Standards for Mathematical Practice

- MP.7 Look for and make use of structure.
- MP.8 Look for and express regularity in repeated reasoning.