

3rd Grade Math Timeline

Macon County 17-18

Standard	Learning Target	Resources	Lesson #
<p>3.OA.A.1 Interpret the factors and products in whole number multiplication equations (e.g., 4×7 is 4 groups of 7 objects with a total of 28 objects or 4 strings measuring 7 inches each with a total of 28 inches.)</p>	<ul style="list-style-type: none"> • Understand that the symbol \times means “groups of,” and problems such as 5×7 refer to 5 groups of 7. • Interpret a multiplication problem situation using pictures, objects, words, numbers, and equations. • Understand that repeated addition and skip counting are strategies for finding a product, but the meaning of multiplication is finding the total number of items in equal-sized groups. 		1
<p>3.OA.B.5 Apply properties of operations as strategies to multiply and divide. (Students need not use formal terms for these properties.)</p>	<ul style="list-style-type: none"> • Understand that numbers can be multiplied in any order and the product will be the same (commutative property of multiplication). • Apply the commutative property of multiplication as a strategy to solve multiplication problems. • Understand that three or more factors in a problem can be grouped in different ways and the product will be the same (associative property of multiplication). • Apply the associative property to solve problems. • Break apart a factor as a strategy for multiplying (distributive property of multiplication). • Apply the distributive property of multiplication as a strategy to learn multiplication facts and to solve multiplication problems. • Solve problems involving equal groups, arrays, and measurement quantities with unknowns in all positions. 		2-3

<p>3.OA.A.2 Interpret the dividend, divisor, and quotient in whole number division equations</p>	<ul style="list-style-type: none"> • Understand division as sharing, knowing the number of equal shares and finding the number in each share or group. • Understand division as separating equal shares or groups and finding the number of shares. • Describe stories or contexts for division expressions, such as $24 \div 4$. <p>Vocabulary: dividend, divisor, quotient</p>		4
<p>3.OA.B.6 Understand division as an unknown-factor problem.</p>	<ul style="list-style-type: none"> • Understand the relationship between multiplication and division. • Demonstrate that fact families are related multiplication and division equations. • Find the unknown number in a whole number multiplication or division equation. 		5
<p>3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division</p> <p>3.OA.B.6 Understand division as an unknown-factor problem.</p> <p>3.OA.A.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers within 100.</p>	<ul style="list-style-type: none"> • Fluently multiply and divide within 100. • Use fact families and the relationship between multiplication and division to find unknown whole numbers in multiplication and division equations. • Solve contextual problems using equations with the unknown whole number in different places in the equations. 		5-6

Benchmark 1

Lessons 1-6

<p>3.OA.D.9 Identify arithmetic patterns (including patterns in the addition and multiplication tables) and explain them using properties of operations.</p>	<ul style="list-style-type: none"> • Use hundreds charts, addition tables, and multiplication tables to model addition and multiplication patterns and explain why the patterns make sense. • Use number properties (informally) to find and explain patterns. • Use knowledge of even and odd numbers to find and explain patterns. 		7
<p>3.NBT.A.1 Round whole numbers to the nearest 10 or 100 using understanding of place value.</p>	<ul style="list-style-type: none"> • Round two- and three-digit numbers to the nearest ten. • Round three-digit numbers to the nearest hundred. • Explain how to round numbers to the nearest ten and to the nearest hundred. 		8
<p>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.</p>	<ul style="list-style-type: none"> • Use a variety of strategies to add two- and three-digit numbers. • Use a variety of strategies to subtract two- and three-digit numbers. 		9
<p>3.NBT.A.3 Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 \times 80, 5 \times 60) using strategies based on place value and properties of operations.</p>	<ul style="list-style-type: none"> • Understand the meaning of a multiplication expression. • Use place value understanding to multiply a one-digit number by multiples of 10. • Use properties of operations to multiply a one-digit number by multiples of 10. 		10

<p>3.OA.A.3 Multiply and divide within 100 to solve contextual problems, with unknowns in all positions, in situations involving equal groups, arrays, and measurement quantities using strategies based on place value, the properties of operations, and the relationship between multiplication and division.</p>	<ul style="list-style-type: none"> • Solve multiplication and division contextual problems involving equal groups with the unknown in all positions. • Solve multiplication and division contextual problems involving arrays with the unknown in all positions. • Solve multiplication and division contextual problems involving area models with the unknown in all positions. 		11
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Standard	Learning Target	Resources	#
<p>3.OA.D.8 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>	<ul style="list-style-type: none"> • Determine operations needed to solve two-step contextual problems. • Model two-step problems with four operations using a variety of representations, including equations with variables. • Solve two-step problems with four operations. • Assess the reasonableness of answers using estimation and mental computation. 		12-13
<h2>Benchmark 2</h2> <h3>Lessons 7-13</h3>			
<p>3.NF.A.1 Understand a</p>	<ul style="list-style-type: none"> • Understand that a fraction is a whole divided into some number of equal parts. 		14

<p>fraction, $\frac{1}{b}$, as the quantity formed by 1 part when a whole is partitioned into b equal parts (unit fraction); understand a fraction $\frac{a}{b}$ as the quantity formed by a parts of size $\frac{1}{b}$.</p> <p><i>For example, $\frac{3}{4}$ represents a quantity formed by 3 parts of size $\frac{1}{4}$.</i></p>	<ul style="list-style-type: none"> • Understand and recognize the parts of a fraction. • Understand that unit fractions are the building blocks of fractions in the same way that 1 is the building block of whole numbers. 		
<p>3.NF.A.2 Understand a fraction as a number on the number line. Represent fractions on a number line.</p>	<ul style="list-style-type: none"> • Understand that, in addition to whole numbers, number lines can show equal parts of a whole, or fractions. • Understand fractions as numbers on a number line. • Understand how to use number lines to count and identify fractional parts. 		15
<p>3.NF.A.3 Explain equivalence of fractions and compare fractions by reasoning about their size.</p> <p>a. Understand two fractions as equivalent (equal) if they are the same size or the same point on a number line.</p> <p>b. Recognize and generate simple equivalent fractions and explain why the fractions are equivalent using a visual fraction model.</p> <p>c. Express whole numbers as fractions and recognize fractions that are</p>	<ul style="list-style-type: none"> • Understand that two fractions are equivalent if they are the same size, cover the same area, or are on the same point on a number line. • Recognize and generate equivalent fractions using fraction models and number lines. • Explain why two fractions are equivalent by using a fraction model or number line. • Use fraction models and number lines to identify and create equivalent fractions, including those that are greater than or equal to one whole. • Identify, model, and write equivalent fractions for whole numbers. • Reason about unit fractions to compare two fractions using the sizes of the unit fractions shown by the denominators and the number of parts shown by the numerators. • Determine if fractions to be compared have the same numerators or denominators. 		16-19

<p>equivalent to whole numbers.</p> <p>d. 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 $>$, $=$, or $<$, to show the relationship and justify the conclusions.</p>	<ul style="list-style-type: none"> • Use models or number lines to explain why one fraction is greater than or less than another. • Use symbols to record the results of comparing fractions with the same numerator or the same denominator. • Read comparison statements fluently and accurately. • Use models and number lines to explain and justify fraction comparisons. • Represent fractions on a number line that are less than, equal to, or greater than one. 		
<h2>TCAP Practice Test</h2> <h3>Lessons 14-19</h3>			
<p>3.MD.A.1 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>	<ul style="list-style-type: none"> • Use an analog clock to tell and write time to the nearest minute. • Relate time on analog and digital clocks. • Express time as the number of minutes before the hour. • Measure time intervals in minutes using clock models and number lines. • Solve contextual problems involving addition of time intervals in minutes. • Solve contextual problems involving subtraction of time intervals in minutes. 		20-21
<p>3.MD.A.2 Measure the mass of objects and liquid volume using standard units of grams (g), kilograms (kg), milliliters</p>	<ul style="list-style-type: none"> • Identify items that can be measured in liquid volume units. • Understand the relative size of 1 milliliter and 1 liter. • Understand that 1,000 milliliters is equal to 1 liter. • Use benchmark measures to estimate liquid 		22-23

<p>(ml), and liters (l). Estimate the mass of objects and liquid volume using benchmarks.</p>	<p>volume.</p> <ul style="list-style-type: none"> • Solve one-step contextual problems involving liquid volume (capacity). • Understand that one way objects can be measured is by how heavy or light they are. • Identify items that can be measured in mass units. • Understand relative masses of gram and kilogram. • Use unit size and benchmarks to estimate mass. • Solve one-step contextual problems involving mass. 		
<p>3.MD.B.3 Draw a scaled 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 scaled graphs.</p>	<ul style="list-style-type: none"> • Interpret data displayed in a bar graph to solve one- and two-step problems involving addition and subtraction. • Interpret data displayed in a pictograph to solve one- and two-step problems involving addition, subtraction, and multiplication. • Recognize that data displayed in pictographs and bar graphs can be represented by a scale other than 1. Recognize that a half symbol on a pictograph represents half the number of items that a whole symbol stands for. • Use multiplication to determine the number of items in data categories on graphs with a scale other than 1. • Draw a scaled pictograph using whole symbols and half symbols to represent data. • Draw a scaled bar graph. 		24-25
<p>3.MD.B.4 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</p>	<ul style="list-style-type: none"> • Use a ruler to measure objects to the nearest $\frac{1}{2}$ inch. • Use a ruler to measure objects to the nearest $\frac{1}{4}$ inch. • Create and display measurement data in a line plot. • Answer questions about data in a line plot. 		26

<p>off in appropriate units: whole numbers, halves, or quarters.</p>			
<p>3.MD.C.5 Recognize that plane figures have an area and understand concepts of area measurement. a. 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. b. Understand that 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.</p>	<ul style="list-style-type: none"> • Understand what a square unit is and the fact that it can be different sizes. • Understand that a square unit is used to measure area. • Understand how to measure area by covering a shape with square units and counting the squares. 		27
<p>3.MD.C.6 Measure areas by counting unit squares (square centimeters, square meters, square inches, square feet, and improvised units).</p>	<ul style="list-style-type: none"> • Find the area of shapes using different-sized square units, including square centimeters and meters, square inches and feet. 		27
<p>3.MD.C.7 Relate area of rectangles 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</p>	<ul style="list-style-type: none"> • Understand that multiplying side lengths of a rectangle provides the same results as tiling it and counting the units. • Use the area formula for rectangles to solve mathematical problems. • Use the area formula for rectangles to solve real-world problems. • Use area models to solve area problems involving combining two rectangles. • Use area models to show how the distributive property can be used to find the area of combined rectangles. 		28-29

<p>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>c. Use tiling to show in a concrete case that the area of a rectangle with whole number side lengths a and b is the sum of $a \times b$ and $a \times 3$.</p> <p>c. Use area models to represent the distributive property in mathematical reasoning.</p> <p>d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the no overlapping parts, applying this Technique to solve real-world problems.</p>	<ul style="list-style-type: none"> • Decompose shapes formed by rectangles, find the area of each rectangle, and add the areas to find the total area of the shape. • Understand that area is additive. 		
<p>3.MD.D.8 Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given</p>	<ul style="list-style-type: none"> • Understand the difference between area and perimeter. • Use side lengths to find the perimeter of a shape. • Find an unknown side length given the perimeter of a shape. 		30

<p>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.</p>	<ul style="list-style-type: none"> • Understand that rectangles with the same area can have different perimeters. • Understand that rectangles with the same perimeter can have different areas. 		
<p>3.G.A.3 Determine if a figure is a polygon.</p>	<ul style="list-style-type: none"> • I can determine if a figure is a polygon. 		31
<p>3.G.A.1 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 draw examples of quadrilaterals that do not belong to any of these subcategories.</p>	<ul style="list-style-type: none"> • Identify two-dimensional shapes and their attributes. • Draw two-dimensional shapes, given attributes. • Compare and contrast attributes of two-dimensional shapes. • Categorize two-dimensional shapes according to attributes. • Identify and draw two-dimensional shapes that do not belong to a given category. • Identify quadrilaterals and their attributes. • Draw quadrilaterals, given attributes. • Compare and contrast attributes of quadrilaterals. • Identify shared attributes of different quadrilaterals. • Categorize quadrilaterals according to attributes. • Identify and draw quadrilaterals that do not belong to a given category. 		31-32
<p>3.G.A.2 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"> • Partition a shape into equal areas. • Express the area of each equal part as a unit fraction of the whole shape. • Partition the same shape in different ways. 		33

C.A. Unit Test 4 to Review for TCAP
Lessons 20-33
