CASE Benchmark Assessments
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Tennessee
3rd GRADE MATH
2018-2019 Pacing Guide

Unit	Standards	Major Topics/Concepts
Place Value and Addition/ Subtraction	3.NBT.A.1 3.NBT.A.2 3.OA.A.4	Round whole numbers to the nearest 10 or 100 using understanding of place value. 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. Determine the unknown whole number in a multiplication or division equation relating three whole numbers within 100. For example, determine the unknown number that makes the equation true in each of the equations: 8 × ? = 48, 5 = ? ÷ 3, 6 × 6 = ?
Geometry 2-D Figures	3.G.A.1 3.G.A.2 3.G.A.3	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. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.* Determine if a figure is a polygon.
Multiplication and Division	3.OA.A.1 3.OA.A.2	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). Interpret the dividend, divisor, and quotient in whole number division equations (e.g., 28 ÷ 7 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).
1st Cumulative Benchmark (covering all content to this point)		

Unit	Standards	Major Topics/Concepts
Multiplication and Division	3.OA.A.3 3.OA.A.4 3.OA.B.5 3.OA.B.6 3.OA.C.7 3.OA.D.8 3.OA.D.9 3.NBT.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 (e.g., contexts including computations such as 3 × ? = 24, 6 × 16 = ?, ? ÷ 8 = 3, or 96 ÷ 6 = ?). Determine the unknown whole number in a multiplication or division equation relating three whole numbers within 100. For example, determine the unknown number that makes the equation true in each of the equations: 8 × ? = 48, 5 = ? ÷ 3, 6 × 6 = ? Apply properties of operations as strategies to multiply and divide. (Students need not use formal terms for these properties.) *Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known (Commutative property of multiplication); 3 × 5 × 2 can be solved by (3 × 5) × 2 or 3 × (5 × 2) (Associative property of multiplication). One way to find 8 × 7 is by using 8 × (5 + 2) = (8 × 5) + (8 × 2). By knowing that 8 × 5 = 40 and 8 × 2 = 16, then 8 × 7 = 40 + 16 = 56 (Distributive property of multiplication over addition).* Understand division as an unknown-factor problem. *For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.* Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of 3rd grade, know from memory all products of two 1-digit numbers and related division facts. 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. Identify arithmetic patterns (including patterns in the addition and multiplication tables) and explain them using properties of operations. *For example, analyze patterns in the multiplication table and observe that 4 times a number is always even (because 4 × 6 = (2 × 2) × 6 = 2 × (2 × 6), which uses the Associative property of multiplication).* Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.
Area, Perimeter, and Arrays	3.MD.C.5 3.MD.C.6 3.MD.C.7 3.MD.D.8	Recognize that plane figures have an area and understand concepts of area measurement. ✓ 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. ✓ Understand that a plane figure that can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units.

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		Measure areas by counting unit squares (square centimeters, square meters, square inches, square feet, and improvised units). Relate area of rectangles to the operations of multiplication and addition. ✓ 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. ✓ 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. ✓ Use tiling to show in a concrete case 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. *For example, in a rectangle with dimensions 4 by 6, students can decompose the rectangle into 4 × 3 and 4 × 3 to find the total area of 4 × 6.* ✓ 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. 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.
Data	3.MD.B.3 3.MD.B.4	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. 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.
2nd Cumulative Benchmark (covering all content to this point)		
Fractions	3.NF.A.1 3.NF.A.2 3.NF.A.3 3.G.A.2	Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$. Understand a fraction as a number on the number line. Represent fractions on a number line. ✓ 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. Recognize that each part has size $1/b$ and that the endpoint 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. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.

Unit	Standards	Major Topics/Concepts
		Explain equivalence of fractions and compare fractions by reasoning about their size. ✓ Understand two fractions as equivalent (equal) if they are the same size or the same point on a number line. ✓ Recognize and generate simple equivalent fractions (e.g., 1/2 = 2/4, 4/6 = 2/3) and explain why the fractions are equivalent using a visual fraction model. ✓ Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. ✓ 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. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.*
Time, Volume/Mass, and Data	3.MD.A.1 3.MD.A.2	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. *For example, students may use a number line to determine the difference between the start and end time of lunch.* 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. *For example, a large paper clip is about one gram, so a box of about 100 large clips is about 100 grams. Therefore, ten boxes would be about 1 kilogram.*
Final Comprehensive Benchmark (covering all content)		