



Mathematics Calculator Guidance Grade 3

TN Standard	Calculator Tested Subpart	Non-Calculator Tested Subpart	enVision Lesson(s)	Notes
Calculator Step Guide				
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.)	✓		Topic 1: Lessons 1-1, 1-2, 1-3 1-6 Topic 2: Lessons 2-1 through 2-5 Topic 5: Lessons 5-5	The calculator could be utilized to check the factors and products.
3.OA.A.2 Interpret the dividend, divisor, and quotient in whole number division equations (e.g., $28 \div 7$ 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).	✓		Topic 1: Lessons 1-4 through 1-6 Topic 4: Lessons 4-1 Topic 5: Lessons 5-5	The calculator could be utilized to check the dividends, divisors and quotients.
3.OA.A.3 Multiply and divide within 100 to solve contextual problems, with the unknown in any positions, in situations involving equal groups, arrays/area, and	✓	✓	Topic 1: Lessons 1-1 through 1-6 Topic 2: Lessons 2-1 through 2-6 Topic 3: Lessons 3-1 through 3-6	Instruction should prepare students to demonstrate mastery with and without the aid of the calculator. The calculator could be utilized to check the multiplication and division.

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<p>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 $3 \times ? = 24$, $6 \times 16 = ?$, $? \div 8 = 3$, or $96 \div 6 = ?$). (See Table 2 - Multiplication and Division Situations).</p>			<p>Topic 4: Lessons 4-1 through 4-9 Topic 4: TN-2 Topic 5: Lessons 5-3 through 5-6 Topic 14: Lesson 14-8 Topic 15: Lesson 15-4 Topic 16: Lessons 16-3, 16-4 and 16-5</p>	
<p>3.OA.A.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers within 100. <i>For example, determine the unknown number that makes the equation true in each of the equations: $8 \times ? = 48$, $5 = ? \div 3$, $6 \times 6 = ?$</i></p>	✓	✓	<p>Topic 4: Lessons 4-7 and 4-8</p>	<p>Instruction should prepare students to demonstrate mastery with and without the aid of the calculator.</p> <p>The calculator could be utilized to check the multiplication and division.</p>
<p>3.OA.B.5 Apply properties of operations as strategies to multiply and divide. (Students need not use formal terms for these properties.) Examples: 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 solved by $(3 \times 5) \times 2$ or $3 \times (5 \times 2)$ (associative property of multiplication). One way to find 8×7 is by</p>		✓	<p>Topic 1: Lesson 1-3 Topic 2: Lesson 2-3 Topic 3: Lessons 3-1 through 3-7 Topic 4: Lesson 4-6 Topic 10: Lesson 10-3</p>	<p>Historically, this standard appeared on the non-calculator subpart of the TCAP assessment.</p> <p>If the calculator is permitted on future assessments, the calculator could be utilized to check the factors and products when using the properties of operations.</p>

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using $8 \times (5 + 2) = (8 \times 5) + (8 \times 2)$. By knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, then $8 \times 7 = 40 + 16 = 56$ (distributive property of multiplication over addition).				
3.OA.B.6 Understand division as an unknown-factor problem. <i>For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.</i>	✓	✓	Topic 4: Lessons 4-1 through 4-4; Lessons 4-6 through 4-7	Instruction should prepare students to demonstrate mastery with and without the aid of the calculator. The calculator could be utilized to check the multiplication and division.
3.OA.C.7 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 $8 \times 5 = 40$, one knows $40 \div 5 = 8$). By the end of 3rd grade, <i>know all products</i> of two one-digit numbers and related division facts.		✓	Topic 2: Lesson 2-3 Topic 5: Lessons 5-1 through 5-6 Topic 6: Lesson 6-4 through 4-7 Topic 8: Lessons 8-3 and 8-7 Topic 9: Lessons 9-3 and 9-4 Topic 11: Lessons 11-2 through 11-4 Topic 14: Lesson 14-8 Topic 16: Lesson 16-2; Lessons 14-4; 14-5	Historically, this standard appeared on the non-calculator subpart of the TCAP assessment. If the calculator is permitted on future assessments, the calculator could be utilized to check the multiplication and division.
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	✓	✓	Topic 4: Lesson 4-9 Topic 7: Lesson 7-1 And 7-4 Topic 8: Lesson 8-1; Lessons 8-3 through 8-5; Lessons 8-7 and 8-8 Topic 9: Lesson 9-1 through 9-7 Topic 10: Lesson 10-1	The calculator could be utilized to check the addition, subtraction, multiplication and division when solving two step equations. Instruction could include practicing how to solve two step equations using calculator.

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rounding (See Table 1 - Addition and Subtraction Situations and Table 2 - Multiplication and Division Situations).			Topic 11: Lesson 11-1 through 11-4 Topic 16: Lesson 16-3	
3.OA.D.9 Identify <i>patterns</i> in a <i>multiplication chart</i> and explain them using properties of operations. For example, <i>in the multiplication chart, observe that 4 times a number is always even</i> (because $4 \times 6 = (2 \times 2) \times 6 = 2 \times (2 \times 6)$, which uses the associative property of multiplication) or, for example, observe that 6 times 7 is one more group of 7 than 5 times 7 (because $6 \times 7 = (5 + 1) \times 7 = (5 \times 7) + (1 \times 7)$, which uses the distributive property of multiplication over addition). (See Table 3 - Properties of Operations)	✓		Topic 2: Lessons 2-1 and 2-2; Lessons 2-4 and 2-5 Topic 3: Lessons 3-2 through 3-4 Topic 4: Lesson 4-5 Topic 5: Lessons 5-1; 5-2; 5-6 Topic 8: Lesson 8-2 Topic 10: Lesson 10-4	The calculator could be utilized to check the addition and multiplication and division when solving problems using the properties of operations.
3.NBT.A.1 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.	✓	✓	Topic 8: Lesson 8-5	No calculator needed.
3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the		✓	Topic 8: Lessons 8-1 through 8-4; Lessons 8-6 through 8-8 Topic 9: Lessons 9-1 through 9-7	The calculator could be utilized to check the addition and subtraction.

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relationship between addition and subtraction.			Topic 11: Lessons 11-1 and 11-3 through 11-4 Topic 14: Lesson 14-3 Topic 16: Lesson 16-3	
3.NBT.A.3 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.	✓	✓	Topic 10: Lessons 10-1 through 10-4	The calculator could be utilized to check the multiplication.
3.NBT.A.4 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 $20,000 + 3,000 + 400 + 50 + 6$).			Topic 1: TN-1	NEW Tennessee Standard
3.NF.A.1 Understand a <i>unit</i> fraction, $1/b$, as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a non-unit fraction, n/b , as the quantity formed by n parts of size $1/b$. For example, $3/4$ represents a quantity formed by 3 parts of size $1/4$.	✓	✓	Topic 12: Lessons 12-1 and 12-2; 12-3; 12-8 Topic 15: Lessons 15-1 and 15-2	No calculator needed.

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<p>3.NF.A.2 Understand a fraction as a number on the number line. Represent fractions on a number line.</p>		✓		No calculator needed.
<p>3.NF.A.2 Understand a fraction as a number on the number line. Represent fractions on a number line.</p> <p>a. 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 locates the number $1/b$ on the number line. For example, on a number line from 0 to 1, students can partition it into 4 equal parts and recognize that each part represents a length of $1/4$ and the first part has an endpoint at $1/4$ on the number line.</p>		✓	Topic 12: Lessons 12-4 through 12-7	No calculator needed.

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<p>3.NF.A.2 Understand a fraction as a number on the number line. Represent fractions on a number line.</p> <p>b. Represent a fraction n/b on a number line diagram by marking off n lengths $1/b$ from 0. Recognize that the resulting interval has size n/b and that its endpoint locates the number n/b on the number line. For example, $5/3$ is the distance from 0 when there are 5 iterations of $1/3$.</p>	✓		Topic 12: Lessons 12-4 through 12-7	No calculator needed.
<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>	✓		Topic 13: Lessons 13-1 through 13-2; 13-6 and 13-7	No calculator needed.
<p>3.NF.A.3 Explain equivalence of fractions and compare fractions by reasoning about their size.</p> <p>b. 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.</p>	✓		Topic 13: Lessons 13-1 through 13-2; 13-8	No calculator needed.

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<p>3.NF.A.3 Explain equivalence of fractions and compare fractions by reasoning about their size.</p> <p>c. Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers. For example, express 3 in the form $3 = \frac{3}{1}$; recognize that $\frac{6}{1} = 6$; locate $\frac{4}{4}$ and 1 at the same point on a number line diagram.</p>	✓		Topic 13: Lesson 13-7	No calculator needed.
<p>3.NF.A.3 Explain equivalence of fractions and compare fractions by reasoning about their size.</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>	✓		Topic 13: Lessons 13-3 through 13-5; 13-8	No calculator needed.
<p>3.MD.A.1 Solve contextual problems in time and money.</p> <p>a) Tell and write time to the nearest minute and measure time intervals in minutes. Solve contextual problems involving addition and</p>			Topic 14: Lessons 14-1 through 14-3; 14-9	NEW TN Standard The calculator could be used to assist students with counting by fives when working with time intervals, if needed.

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<p>subtraction of time intervals in minutes.</p>				
<p>3.MD.A.1 Solve contextual problems in time and money.</p> <p>b) 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 \$1000 using the \$ symbol appropriately.</p>			<p>Topic 14: TN-6 and TN-7</p>	<p>NEW TN Standard The calculator could be used to assist students</p>
<p>3.MD.A.2 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.</p>	<p>✓</p>		<p>Topic 14: Lessons 14-4 and 14-5; TN-4;14-6 through 14-8; TN-5</p>	<p>The calculator could be used to check computation in some of the problems in the Independent Practice.</p>

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<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 graphs.</p>	✓	✓	<p>Topic 7: Lessons 7-1 through 7-5</p>	<p>A calculator could be utilized to check answers for some of the word problems and to skip count when representing the data in the data set.</p>
<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 off in appropriate units: whole numbers, halves, or quarters.</p>	✓		<p>Topic 12: Lessons 12-6 and 12-7</p>	<p>No calculator needed.</p>
<p>3.MD.C.5 Recognize that plane figures have an area and understand concepts of area measurement.</p> <p>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.</p> <p>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>		✓	<p>Topic 6: Lessons 6-1 through 6-3</p> <p>b-only Topic 5: Lesson 15-3</p>	<p>No calculator needed.</p>

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<p>3.MD.C.6 Measure areas by counting unit squares (square centimeters, square meters, square inches, square feet, and improvised units).</p>	✓	✓	<p>Topic 6: Lessons 6-1 through 6-3</p>	<p>No calculator needed.</p>
<p>3.MD.C.7 Relate area of rectangles to the operations of multiplication and addition.</p> <p>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.</p>		✓	<p>Topic 6: Lesson 6-4 and 6-7</p>	<p>A calculator could be utilized to check answers when multiplying side lengths to find areas of rectangles with whole number side lengths.</p>
<p>3.MD.C.7 Relate area of rectangles to the operations of multiplication and addition.</p> <p>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.</p>	✓		<p>Topic 6: Lesson 6-4 and 6-7</p>	<p>A calculator could be utilized when multiplying side lengths to find areas of rectangles with whole number side lengths.</p>

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<p>3.MD.C.7 Relate area of rectangles to the operations of multiplication and addition.</p> <p>c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $(b + c)$ is the sum of $(a \times b)$ and $(a \times c)$. Use the 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. (See Table 3 - Properties of Operations).</p>	✓		Topic 6: Lesson 6-5	<p>A calculator could be utilized to check answers. A calculator could be utilized to check answers when using the distributive property.</p>
<p>3.MD.C.7 Relate area of rectangles to the operations of multiplication and addition.</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 non-overlapping parts, applying this technique to solve real-world problems.</p>	✓		Topic 6: Lessons 6-6 and 6-7	<p>A calculator could be utilized to check answers when finding area of rectilinear figures when decomposing them into non-overlapping rectangles and adding the areas of non-overlapping parts.</p>

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<p>3.MD.D.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.</p>	✓		<p>Topic 16: Lessons 16-1 through 16-6</p>	<p>A calculator could be used to check answers.</p>
<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>	✓		<p>Topic 15: Lessons 15-1 through 15-4</p>	<p>No calculator needed. (A calculator could be utilized to check addition and multiplication.)</p>
<p>3.G.A.2 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>Topic 15: Lessons 15-1 and 15-2</p>	<p>No calculator needed.</p>
<p>3.G.A.3 Determine if a figure is a polygon.</p>		✓	<p>Lesson TN-8</p>	<p>No calculator needed.</p>

(Note: Some standards may have been previously tested on the calculator and non-calculator subparts of the TCAP.)

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