

Mathematics
Grade 3

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Item Types	Cognitive Levels	Calculator	Strand II – Number Sense	Item Totals
			Sub-strand A. Number Sense	By Strand
			Standard: Represent whole numbers in various ways to quantify information and to solve real-world and mathematical problems. Understand the concepts of decimals and common fractions.	16 – 18
			By Sub-strand	5 – 7
			Benchmarks	By Benchmark
MC	A	CN	II.A.1 Students will compare and order whole numbers. <i>Content Limit:</i> Whole numbers must be less than or equal to 9,999. When comparing numbers between 1,000 and 9,999, numbers will differ in only hundreds and thousands places. When comparing numbers, mathematical symbols will not be used for greater than or less than. When ordering a set of numbers, no more than four values are used. Numbers may be ordered least to greatest or greatest to least.	1 – 2
MC	A	CN	II.A.2 Students will identify equivalent arithmetic expressions for forms of whole numbers. <i>Content Limit:</i> Numerals may contain at most four digits.	1 – 2
MC	A	CN	II.A.3 Students will identify fractions as part of a whole. <i>Content Limit:</i> Fraction denominators are limited to 2, 3, 4, 6 and 8. No mixed numbers or improper fractions may be used. Equivalent fractions may be used.	1 – 2
MC or CR	A B C	CN	II.A.4 Students will represent fractions with pictures/models or numbers. <i>Content Limit:</i> Fraction denominators are limited to 2, 3, 4, 6 and 8. In a CR requiring drawing or describing, fraction denominators are limited to 2, 4 and 8.	1 – 2

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Item Types	Cognitive Levels	Calculator	Strand II – Number Sense	Item Totals
			Sub-strand B. Computation and Operation	By Strand
			Standard: Compute fluently and make reasonable estimates with whole numbers in real-world and mathematical problems. Understand the meanings of arithmetic operations and how they relate to one another.	<i>continued</i>
			By Sub-strand	10 – 12
			Benchmarks	By Benchmark
MC or CR	A B C	CL	<p>II.B.1, II.B.2 and II.B.3 Students will use addition and subtraction to solve real-world or mathematical problems.</p> <p><i>Content Limit:</i> Addition items may contain at most three whole number addends, containing at most four digits each. Sums are less than or equal to 9,999. Subtraction items may contain whole numbers containing at most 3 digits each. Items can assess only addition, only subtraction or addition and subtraction. Items may include the use of the inverse relationship of addition and subtraction.</p>	5 – 6
MC	A	NC	<p>II.B.4 and II.B.5 Students will demonstrate mastery of basic addition facts. Students will demonstrate mastery of subtraction facts, using the inverse of basic addition facts as a possible strategy.</p> <p><i>Content Limit:</i> Addends are limited to 0-9. Items are limited to no more than two steps. When two steps, first sum must be less than or equal to 10.</p>	3 – 4
MC	A	CN	<p>II.B.6 and II.B.7 Students will demonstrate multiplication facts using models/pictures or numbers. Students will demonstrate knowledge of division using models or equal sharing as a possible strategy.</p> <p><i>Content Limit:</i> Factors are limited to 1 – 10. Items may include expressions or number sentences.</p>	2 – 3

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Item Types	Cognitive Levels	Calculator	Strand III – Patterns, Functions and Algebra	Item Totals
			Sub-strand A. Patterns and Functions Standard: Understand and describe patterns in numbers and shapes.	By Strand 6 – 8
			Benchmarks	By Sub-strand 3 – 5
				By Benchmark
MC or CR	A B C	CN	III.A.1 Students will create and extend repeating and growing patterns in numbers and shapes. <i>Content Limit:</i> In a repeating pattern, the pattern will be repeated three times (stem plus two). In a MC repeating pattern, items do not require identification of more than four terms beyond what is given. In a growing or shrinking pattern, the first four terms must be given. In a MC growing or shrinking pattern, items do not require identification of more than two terms beyond what is given. The largest value of any term provided or in an answer option is 75. The operations in growing or shrinking patterns are limited to addition and subtraction. Patterns may include shapes and/or numbers. Creating of patterns is limited to CR items.	3 – 5

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Item Types	Cognitive Levels	Calculator	Strand III – Patterns, Functions and Algebra	
			Item Totals	
			By Strand	
			<i>continued</i>	
			By Sub-strand	
			2 – 4	
			By Benchmark	
MC	A B C	NC	III.B.1	1 – 3
			<p>Students will identify a missing number or operation in an arithmetic equation or expression.</p> <p><i>Content Limit:</i> The total value of each side of an equation must be less than 75. Number sentence or graphic representation must be provided. Arithmetic expressions may be included on both sides of the equation. For example, $(3 + _ = 8$ or $3 + 5 = _ + 4)$. Items may include context.</p>	
MC	A B	NC	III.B.2	0 – 1
			<p>Students will use properties involving ordering, grouping and the number 0 to do simple computations.</p> <p><i>Content Limit:</i> <i>Order</i> refers to commutative property. <i>Grouping</i> refers to associative property. Properties of the number 0 refer to the additive identity. Operations are limited to addition. Addends are limited to 0 – 9. Items may have a maximum of three operations per item. If there are three addends, the sum of any two addends must be less than or equal to 10. If there are four addends, the sum of two addends must be 10.</p>	

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Item Types	Cognitive Levels	Calculator	Strand IV – Data Analysis, Statistics and Probability	Item Totals
			By Strand	
			6 – 7	
			By Sub-strand	
			Sub-strand A. Data and Statistics Standard: Represent and interpret data in real-world and mathematical problems.	6 – 7
			Benchmarks	By Benchmark
MC	A B	CN	<p>IV.A.1 Students will read and interpret data from graphs and charts.</p> <p><i>Content Limit:</i> Data may be displayed using charts, line plots, single bar graphs, circle graphs, pictographs, Venn diagrams or tally charts. Graphics may have at most five data categories. Total number on graph or chart will not exceed 100. Scales are in increments of 1, 2 or 5. Bar graphs may be vertical or horizontal. Circle graphs may have at most four sectors. Pictograph keys must be less than or equal to five.</p>	3 – 4
MC or CR	A B C	CN	<p>IV.A.2 Students will represent data with appropriate title and key.</p> <p><i>Content Limit:</i> Data may be displayed using charts, line plots, single bar graphs, pictographs or tally charts. Graphics may have at most five data categories. Total number on graph will not exceed 30. Scales are increments of 1, 2 or 5. Bar graphs may be vertical or horizontal. Pictograph keys must be less than or equal to five. In a CR item, students may be asked to interpret their graph or chart.</p>	3 – 4

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Item Types	Cognitive Levels	Calculator	Strand IV – Data Analysis, Statistics and Probability	
				Item Totals
				By Strand
				<i>continued</i>
			Sub-strand B. Probability Standard: Explore the basic concept of probability.	By Sub-strand
				N/A
			Benchmarks	By Benchmark
			IV.B Students will use diagrams, lists and/or simple charts to represent all possible outcomes for an event or experiment. <i>Content Limit:</i> Assessed only at the classroom level.	N/A
			IV.B Students will determine most likely or least likely outcomes. <i>Content Limit:</i> Assessed only at the classroom level.	N/A

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Item Types	Cognitive Levels	Calculator	Strand V – Spatial Sense, Geometry and Measurement	Item Totals
				By Strand
				14 – 15
				By Sub-strand
			Sub-strand A. Spatial Sense Standard: Understand the concept of reflection symmetry as applied to geometric shapes. Understand how representations of shapes are affected by various motions.	2 – 3
			Benchmarks	By Benchmark
MC or CR	A	CN	V.A.1 Students will identify lines of symmetry in geometric shapes. <i>Content Limit:</i> Shapes limited to two-dimensions.	1 – 2
MC	A	CN	V.A.2 Students will identify the results of a single flip, slide or turn of a given figure. <i>Content Limit:</i> Figures may include regular or irregular polygons with at most six sides. Regular polygons must include distinct markings that enable identification of the transformation. Turns may only be 90° or 180° (and may not assess knowledge of left/right).	1 – 2

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Item Types	Cognitive Levels	Calculator	Strand V – Spatial Sense, Geometry and Measurement	Item Totals		
						By Strand
						<i>continued</i>
			Sub-strand B. Geometry Standard: Classify shapes by specified attributes. Identify simple shapes within complex shapes.			By Sub-strand
			4 – 7			
			Benchmarks	By Benchmark		
MC	A	CN	V.B.1 Students will identify and/or classify shapes according to number and lengths of sides and kinds of angles. <i>Content Limit:</i> Shapes are limited to circle, triangle, square, rectangle, rhombus, trapezoid and hexagon.	2 – 4		
MC	A B	CN	V.B.2 Students will identify the results of dividing or combining simple given shapes. Students will identify simple three-dimensional shapes. <i>Content Limit:</i> Two-dimensional shapes are limited to circle, triangle, square, rectangle, rhombus, trapezoid and hexagon. Three-dimensional shapes are limited to cube, cylinder, cone and rectangular prism. Items may involve context.	2 – 4		

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Item Types	Cognitive Levels	Calculator	Strand V – Spatial Sense, Geometry and Measurement	Item Totals
				By Strand
				<i>continued</i>
			Sub-strand C. Measurement Standard: Measure and calculate length, time, weight, temperature and money using appropriate tools and units to solve real-world and mathematical problems.	By Sub-strand 6 – 8
			Benchmarks	By Benchmark
MC	A	CN	V.C.1 Students will select an appropriate tool to measure time, length, weight and temperature. Students will identify the appropriate unit to measure time, length, weight and temperature. <i>Content Limit:</i> Customary and metric units may not be used in the same problem. Measurement of time may use units of hours or minutes. Measurement of length may use units of inches, feet, yards, centimeters or meters. When using a ruler, measurement of length will use units of half-inch, inch or centimeter. Measurement of weight may use units of pounds or ounces. Measurement of temperature may use either Fahrenheit or Celsius scale.	1 – 2
MC or CR	A B	CL	V.C.2 Students will determine the perimeter of a polygon. <i>Content Limit:</i> Polygons may be regular or irregular and contain at most six sides. Regular polygons may have side lengths less than or equal to 10. To be consistent with the computation and operations benchmarks, irregular polygons may have no more than three different lengths of sides (e.g., an irregular hexagon may have sides of 2, 2, 3, 3, 5, 5). Students may compute the length of an unknown side given the perimeter and the other sides. Sides of polygons must have whole number measurements.	1 – 2
MC	A	CN	V.C.3 Students will know the relationship between units of length in a system of measurement <i>Content Limit:</i> Relationships will be limited to 12 inches = 1 foot, 3 feet = 1 yard and 100 centimeters = 1 meter.	1 – 2

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MC	A B	CN	<p>V.C.4 and V.C.5 Students will tell time to the minute and determine elapsed time.</p> <p><i>Content Limit:</i> Time will be determined to the minute. Elapsed time will have beginning and ending times in multiples of 5. Elapsed time must be less than 60 minutes.</p>	2 – 3
MC or CR	A B C	CN	<p>V.C.6 Students will make change in a variety of ways.</p> <p><i>Content Limit:</i> When a problem asks for as few coins as possible, change may be up to and including 1 dollar. Given pictures, items may require counting money up to \$5.00. In CR, items may require coins shown in several different ways or combinations.</p>	1 – 2