

Math Standards:  
Counting and Cardinality

<b>K.A</b>	<b>Know number names and the count sequence.</b>				
	<p>K.1) Count to 100 by ones, fives, and tens</p> <p>K.2) Write numbers 0 to 20. Represent a number of objects with a written numeral 0 to 20.</p> <p>K.3) Count forward beginning from a given number within the known sequence.</p>				
<b>K.B</b>	<b>Count to tell the number of objects.</b>				
	<p>B.4) Understand the relationship between numbers and quantities; connect counting to cardinality</p> <p>B.5) Count to answer, “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle or</p>				

	as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.				
<b>K.C</b>	<b>Compare numbers.</b>				
	<p>C.6) Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group.</p> <p>C.7) Compare two given numbers up to 10, when written as numerals, using the terms greater than, less than, or equal to.</p>				

	Kindergarten students:		1st grade students:		2nd grade students:
<b>K.A</b>	<b>Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.</b>	<b>1.A</b>	<b>Represent and solve problems involving addition and subtraction.</b>	<b>2.A</b>	<b>Represent and solve problems involving addition and subtraction.</b>
	<p>A.1) Represent addition and subtraction with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations.</p> <p>A.2) Add and subtract within 10 to solve contextual problems using objects or drawings to represent the problem.</p> <p>A.3) Decompose numbers less than or equal to 10 into addend pairs in more than one way. (5=3+2, 5=4+1) by using objects or drawings. Record each</p>		<p>A.1) Add and subtract within 20 to solve contextual problems, with unknowns in all positions, involving situations of add to, take from, put together/take apart, and compare. Use objects, drawings, and equations with a symbol for the unknown number to represent the problem.</p> <p>A.2) Add three whole numbers whose sum is within 20 to solve contextual problems using objects, drawings, and equations with a symbol for the unknown number to represent the problem.</p>		<p>A.1) Add and subtract within 100 to solve one- and two-step contextual problems, with unknowns in all positions, involving situations of add to, take from, put together/take apart, and compare. Use objects, drawings, and equations with a symbol for the unknown number to represent the problem.</p>

	<p>decomposition using a drawing or writing an equation.</p> <p>A.4) Find the number that makes 10 when added to any given number from 1 to 9 using objects or drawings.</p>				
		<b>1.B</b>	<b>Understand and apply properties of operations and the relationship between addition and subtraction.</b>	<b>2.B</b>	<b>Add and subtract within 30.</b>
			<p>B.3) Apply properties of operations (additive identity , commutative, and associative) as strategies to add and subtract. (Students need not to use formal terms for these properties)</p> <p>B.4) Understand subtraction as an unknown-addend problem. <i>For example, to solve <math>10 - 8 = \underline{\quad}</math>, a student can use <math>8 + \underline{\quad} = 10</math>.</i></p>		<p>B.2) Fluently add and subtract within 30 using mental strategies. By the end of 2nd grade,</p>
		<b>1. C</b>	<b>Add and subtract within 20.</b>	<b>2.C</b>	<b>Work with equal groups of objects to gain foundations for multiplication.</b>

			<p>C.5) Add and subtract within 20 using strategies such as counting on, counting back, making 10, using fact families and related known facts, and composing/decomposing numbers with an emphasis on making ten (e.g., <math>13 - 4 = 13 - 3 - 1 = 10 - 1 = 9</math> or adding <math>6 + 7</math> by creating the known equivalent <math>6 + 4 + 3 = 10 + 3 = 13</math>).</p> <p>C.6) Fluently add and subtract within 20 using mental strategies. By the end of 1st grade, know from memory all sums up to 10.</p>		<p>C.3) Determine whether a group of objects (up to 20) has an odd or even number of members by pairing objects or counting them by 2s. Write an equation to express an even number as a sum of two equal addends.</p> <p>C.4) Use repeated addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.</p>
		<b>1.D</b>	<b>Work with addition and subtraction equations.</b>		
			<p>D.7) Understand the meaning of the equal sign (e.g., <math>6 = 6</math>; <math>5 + 2 = 4 + 3</math>; <math>7 = 8 - 1</math>). Determine if equations involving addition and subtraction are true or false.</p> <p>D.8) Determine the unknown whole number in an addition or subtraction equation, with the unknown in any position (e.g., <math>8 + ? = 11</math>, <math>5 = ? - 3</math>, <math>6 + 6 = ?</math>).</p>		

	Kindergarten students:		1st grade students:		2nd grade students:
<b>K.A</b>	<b>Work with numbers 11-19 to gain foundations for place value.</b>	<b>1.A</b>	<b>Extend the counting sequence.</b>	<b>2.A</b>	<b>Understand place value.</b>
	A.1) Compose and decompose from 11-19 into ten ones and some further ones by using objects or drawings and record each composition or decomposition by a drawing or equations ( $18=10+8$ ); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.		A.1) Count to 120, starting at any number. Read and write numerals to 120 and represent a number of objects with a written numeral. Count backward from 20.		A.1) Know that the three digits of a three-digit number represent amounts of hundreds, tens, and ones (e.g., 706 can be represented in multiple ways as 7 hundreds, 0 tens, and 6 ones; 706 ones; or 70 tens and 6 ones).  A.2) Count within 1000. Skip-count within 1000 by 5s, 10s, and 100s, starting from any number in its skip counting sequence.  A.3) Read and write numbers to 1000 using standard form, word form, and expanded form.

					A.4) Compare two three-digit numbers based on the meanings of the digits in each place and use the symbols $>$ , $=$ , and $<$ to show the relationship.
		<b>1.B</b>	<b>Understand place value.</b>	<b>2. B</b>	<b>Use place value understanding and properties of operations to add and subtract.</b>
			<p>B.2) Know that the digits of a two-digit number represent groups of tens and ones (e.g., 39 can be represented as 39 ones, 2 tens and 19 ones, or 3 tens and 9 ones).</p> <p>B.3) Compare two two-digit numbers based on the meanings of the digits in each place and use the symbols <math>&gt;</math>, <math>=</math>, and <math>&lt;</math> to show the relationship.</p>		<p>B.5) Fluently add and subtract within 100 using properties of operations, strategies based on place value, and/or the relationship between addition and Subtraction.</p> <p>B.6) Add up to four two-digit numbers using properties of operations and strategies based on place value.</p> <p>B.7) Add and subtract within 1000 using concrete models, drawings, strategies based on place value, properties of operations, and/or the relationship</p>

				<p>between addition and subtraction to explain the reasoning used.</p> <p>B.8) Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100– 900.</p> <p>2.NBT.B.9 Explain why addition and subtraction strategies work using properties of operations and place value. (Explanations may include words, drawing, or objects.)</p>
		<b>1.C</b>	<b>Use place value understanding and properties of operations to add and subtract.</b>	
			<p>C.4) Add a two-digit number to a one-digit number and a two-digit number to a multiple of ten (within 100). Use concrete models, drawings, strategies based on place value, properties of operations, and/or the relationship between addition and subtraction to explain the reasoning used.</p> <p>C.5) Mentally find 10 more or 10 less</p>	

		<p>than a given two-digit number without having to count by ones and explain the reasoning used.</p> <p>C.6) Subtract multiples of 10 from multiples of 10 in the range 10-90 using concrete models, drawings, strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.</p>		
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	Kindergarten students:		1st grade students:		2nd grade students:
<b>K.A</b>	<b>Describe and compare measurable.</b>	<b>1.A</b>	<b>Measure lengths indirectly and by iterating length units.</b>	<b>2A.</b>	<b>Measure and estimate lengths in standard units.</b>
	<p>A.1) Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.</p> <p>A.2) Directly compare two objects with a measurable attribute in common to see which object has “more of”/”less of” the attribute and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.</p>		<p>A.1) Order three objects by length. Compare the lengths of two objects indirectly by using a third object. <i>For example, to compare indirectly the heights of Bill and Susan: if Bill is taller than mother and mother is taller than Susan, then Bill is taller than Susan.</i></p> <p>A.2) Measure the length of an object using non-standard units and express this length as a whole number of units.</p>		<p>A.1) Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.</p> <p>A.2) Measure the length of an object using two different units of measure and describe how the two measurements relate to the size of the unit chosen.</p> <p>A.3) Estimate lengths using units of inches, feet, yards, centimeters, and Meters.</p> <p>A.4) Measure to determine how much longer one object is than another and express the difference in terms of a standard unit of length.</p>

<b>K.B</b>	<b>Classify objects and count the number of objects.</b>	<b>1.B</b>	<b>Work with time and money.</b>	<b>2.B</b>	<b>Relate addition and subtraction to length.</b>
	B.3) Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.		B.3) Tell and write time in hours and half-hours using analog and digital clocks.  B.4) Count the value of a set of like coins less than one dollar using the ¢ symbol only.		B.5) Add and subtract within 100 to solve contextual problems involving lengths that are given in the same units by using drawings and equations with a symbol for the unknown to represent the problem.  B.6) Represent whole numbers as lengths from 0 on a number line and know that the points corresponding to the numbers on the number line are equally spaced. Use a number line to represent whole number sums and differences of lengths within 100.
<b>K.C</b>	<b>Work with time and money.</b>	<b>1.C</b>	<b>Represent and interpret data.</b>	<b>2.C</b>	<b>Work with time and money.</b>
	C.4) Identify time to the hour and half-hour on an analog clock and digital clock.		C.5) Organize, represent, and interpret data with up to three categories. Ask and answer questions about the total number of data points, how many in each category, and how many more or		C.7) Tell and write time in quarter hours and to the nearest five minutes (in a.m. and p.m.) using analog and digital clocks.

	C.5) Identify a penny, nickel, dime, and quarter and name their values.		less are in one category than in another.		C.8) Solve contextual problems involving dollar bills, quarters, dimes, nickels, and pennies using ¢ and \$ symbols appropriately.
				<b>2.D</b>	<b>Represent and interpret data.</b>
					<p>D.9) Generate measurement data by measuring lengths of several objects</p> <p>D.10) Draw a pictograph and a bar graph (with intervals of one) to represent a data set with up to four categories. Solve addition and subtraction problems related to the data in a graph.</p>

	Kindergarten students:		1st grade students:		2nd grade students:
<b>K.A</b>	<b>Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes)</b>	<b>1.A</b>	<b>Reason about shapes and their attributes.</b>	<b>2.A</b>	<b>Reason about shapes and their attributes.</b>
	<p>A.1) Describe objects in the environment using names of shapes and describe the relative positions of these objects using terms such as: above, below, beside, in front of, behind, and next to.</p> <p>A.2) Correctly name shapes regardless of their orientations or overall size.</p> <p>A.3) Identify shapes as two dimensional (lying in a plane or “flat”) or three dimensional (“solid”).</p>		<p>A.1) Distinguish between attributes that define a shape (e.g., number of sides and vertices) versus attributes that do not define the shape (e.g., color, orientation, overall size); build and draw two-dimensional shapes to possess defining attributes.</p> <p>A.2) Create a composite shape and use the composite shape to make new shapes by using two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, rectangular prisms, cones, and cylinders).</p> <p>A.3) Partition circles and rectangles into two and four equal shares, describe the shares using the words <i>halves</i>, <i>fourths</i>, and <i>quarters</i>, and</p>		<p>A.1) Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. Draw two-dimensional shapes having specified attributes (as determined directly or visually, not by measuring), such as a given number of angles or a given number of sides of equal length.</p> <p>A.2) Partition a rectangle into rows and columns of same-sized squares and find the total number of squares.</p> <p>A.3) Partition circles and rectangles into two, three, and four equal shares, describe the shares using the words halves, thirds, fourths, half</p>

			<p>use the phrases <i>half of</i>, <i>fourth of</i>, and <i>quarter of</i>. Describe the whole as <i>two of</i>, or <i>four of</i> the shares. Understand for these examples that partitioning into more equal shares creates smaller shares.</p>		<p>of, a third of, and a fourth of, and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.</p>
<b>K.B</b>	<b>Analyze, compare, and compose shapes.</b>				
	<p>B.3) Analyze and compare two and three dimensional shapes in different sizes and orientations, using informal language to describe their similarities, differences, parts (number of sides and vertices/'corners") and other attributes ( having sides of equal length).</p> <p>B.4) Model shapes in the world by building shapes from components (sticks and clay balls) and drawing shapes.</p> <p>B.5) Compose simple shapes to form larger shapes.</p> <p>B.6) Identify line of symmetry.</p>				

