

Kindergarten Standards

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These are the standards for what is taught in Kindergarten. It is the expectation that these skills will be reinforced after they have been taught.

Mathematical Practice Standards Taught Throughout the Year		
1. Make sense of problems and persevere in solving them	2. Reason abstractly and quantitatively	3. Construct viable arguments and critique the reasoning of others
<p>In Kindergarten, students begin to build the understanding that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Real-life experiences should be used to support students’ ability to connect mathematics to the world. To help students connect the language of mathematics to everyday life, ask students questions such as “How many students are absent?” or have them gather enough blocks for the students at their table. Younger students may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, “Does this make sense?” or they may try another strategy.</p>	<p>Younger students begin to recognize that a number represents a specific quantity. Then, they connect the quantity to written symbols. Quantitative reasoning entails creating a representation of a problem while attending to the meanings of the quantities. For example, a student may write the numeral 11 to represent an amount of objects counted, select the correct number card 17 to follow 16 on a calendar, or build two piles of counters to compare the numbers 5 and 8. In addition, kindergarten students begin to draw pictures, manipulate objects, or use diagrams or charts to express quantitative ideas. Students need to be encouraged to answer questions such as “How do you know?”, which reinforces their reasoning and understanding and helps student develop mathematical language.</p>	<p>Younger students construct arguments using concrete referents, such as objects, pictures, drawings, and actions. They also begin to develop their mathematical communication skills as they participate in mathematical discussions involving questions like “How did you get that?” and “Why is that true?” They explain their thinking to others and respond to others’ thinking. They begin to develop the ability to reason and analyze situations as they consider questions such as “Are you sure that ___?”, “Do you think that would happen all the time?”, and “I wonder why ___?”</p>



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Mathematical Practice Standards Taught Throughout the Year		
4. Model with mathematics	5. Use appropriate tools strategically	6. Attend to precision
<p>In early grades, students experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed. For example, a student may use cubes or tiles to show the different number pairs for 5, or place three objects on a 10-frame and then determine how many more are needed to “make a ten.” Students rely on manipulatives (or other visual and concrete representations) while solving tasks and record an answer with a drawing or equation.</p>	<p>Younger students begin to consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, kindergarteners may decide that it might be advantageous to use linking cubes to represent two quantities and then compare the two representations side-by-side or later, make math drawings of the quantities. Students decide which tools may be helpful to use depending on the problem or task and explain why they use particular mathematical tools.</p>	<p>Kindergarten students begin to develop precise communication skills, calculations, and measurements. Students describe their own actions, strategies, and reasoning using grade-level appropriate vocabulary. Opportunities to work with pictorial representations and concrete objects can help students develop understanding and descriptive vocabulary. For example, students analyze and compare two- and three-dimensional shapes and sort objects based on appearance. While measuring objects iteratively (repetitively), students check to make sure that there are no gaps or overlaps. During tasks involving number sense, students check their work to ensure the accuracy and reasonableness of solutions. Students should be encouraged to answer questions such as, “How do you know your answer is reasonable?”</p>



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Mathematical Practice Standards Taught Throughout the Year	
7. Look for and make use of structure	8. Look for and express regularity in repeated reasoning
<p>Younger students begin to discern a pattern or structure in the number system. For instance, students recognize that $3 + 2 = 5$ and $2 + 3 = 5$. Students use counting strategies, such as counting on, counting all, or taking away, to build fluency with facts to 5. Students notice the written pattern in the “teen” numbers—that the numbers start with 1 (representing 1 ten) and end with the number of additional ones. Teachers might ask, “What do you notice when ___?”</p>	<p>In the early grades, students notice repetitive actions in counting, computations, and mathematical tasks. For example, the next number in a counting sequence is 1 more when counting by ones and 10 more when counting by tens (or 1 more group of 10). Students should be encouraged to answer questions such as, “What would happen if ___?” and “There are 8 crayons in the box. Some are red and some are blue. How many of each could there be?” Kindergarten students realize 8 crayons could include 4 of each color ($8 = 4 + 4$), 5 of one color and 3 of another ($8 = 5 + 3$), and so on. For each solution, students repeatedly engage in the process of finding two numbers to join together to equal 8.</p>

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Standards taught during 1st Quarter	
Counting and Cardinality Know the number names and the counting sequence. Count to tell the number of objects. Compare numbers.	Operations and Algebraic Thinking Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.
<p>K.CC.1 Count to 100 by ones and by tens. (<i>Count to 10; write numbers to 5</i>)</p> <p>K.CC.2 Count forward within 100 beginning from any given number other than 1. (<i>Count to 10; write numbers to 5</i>)</p> <p>K.CC.3 Write numerals from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). (<i>Numbers to 10</i>)</p> <p>K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality using a variety of objects including pennies. (<i>Numbers to 10</i>)</p> <ol style="list-style-type: none"> When counting objects, establish a one-to-one relationship by saying the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. Understand that the last number name said tells the number of objects counted and that the number of objects is the same regardless of their arrangement or the order in which they were counted. Understand that each successive number name refers to a 	<p>K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds such as claps, acting out situations, verbal explanations, expressions, or equations. Drawings need not show details, but should show the mathematics in the problem. (This applies whenever drawings are mentioned in the Standards.)</p> <p>K.OA.2 Solve addition and subtraction problems (written or oral), and add and subtract within 10 by using objects or drawings to represent the problem. (<i>Numbers to 5</i>)</p> <p>K.OA.3 Decompose numbers and record compositions for numbers less than or equal to 10 into pairs in more than one way by using objects and, when appropriate, drawings or equations. (<i>Numbers to 5</i>)</p> <p>K.OA.5 Fluently ^G add and subtract within 5.</p>



quantity that is one larger.

K.CC.5 Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects. (*Numbers to 10*)

K.CC.6 Orally identify (without using inequality symbols) whether the number of objects in one group is greater/more than, less/fewer than, or the same as the number of objects in another group, not to exceed 10 objects in each group. (*Groups/ Numbers to 20*)

K.CC.7 Compare (without using inequality symbols) two numbers between 0 and 10 when presented as written numerals. (*Groups/ Numbers to 20*)



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Standards taught during 2nd Quarter		
Counting and Cardinality Know the number names and the counting sequence. Count to tell the number of objects. Compare numbers.	Operations and Algebraic Thinking Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	Measurement and Data Identify, describe, and compare measurable attributes. Classify objects and count the number of objects in each category.
<p>K.CC.1 Count to 100 by ones and by tens. (<i>Count to 20</i>)</p> <p>K.CC.2 Count forward within 100 beginning from any given number other than 1. (<i>Count to 20</i>)</p> <p>K.CC.3 Write numerals from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). (<i>Numbers to 10</i>)</p> <p>K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality using a variety of objects including pennies. (<i>Numbers to 10</i>)</p> <p>a. When counting objects, establish a one-to-one relationship by saying the number names in the standard order, pairing each object with one and only one number name and each number</p>	<p>K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds such as claps, acting out situations, verbal explanations, expressions, or equations. Drawings need not show details, but should show the mathematics in the problem. (This applies whenever drawings are mentioned in the Standards.)</p> <p>K.OA.2 Solve addition and subtraction problems (written or oral), and add and subtract within 10 by using objects or drawings to represent the problem. (<i>Numbers to 5</i>)</p> <p>K.OA.3 Decompose numbers and record compositions for numbers less than or equal to 10 into pairs in more than one way by using objects and, when appropriate, drawings or equations. (<i>Numbers to 10</i>)</p>	<p>K.MD.2 Directly compare two object with a measurable attribute in common to see which object has “more of” or “less of” the attribute, and describe the difference. <i>For example, directly compare the heights of two children and describe one child as taller/ shorter.</i></p> <p>K.MD.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. The number of objects in each category should be less than or equal to ten. Counting and sorting coins should be limited to pennies.</p>



<p>name with one and only one object.</p> <p>b. Understand that the last number name said tells the number of objects counted and that the number of objects is the same regardless of their arrangement or the order in which they were counted.</p> <p>c. Understand that each successive number name refers to a quantity that is one larger.</p> <p>K.CC.5 Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects. (<i>Numbers to 10</i>)</p> <p>K.CC.6 Orally identify (without using inequality symbols) whether the number of objects in one group is greater/more than, less/fewer than, or the same as the number of objects in another group, not to exceed 10 objects in each group. (<i>Groups/ Numbers to 20</i>)</p> <p>K.CC.7 Compare (without using inequality symbols) two numbers between 0 and 10 when presented as written numerals. (<i>Groups/ Numbers to 20</i>)</p>	<p>K.OA.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or, when appropriate, an equation.</p> <p>K.OA.5 Fluently ^G add and subtract within 5.</p>	
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Standards taught during 3rd Quarter		
Counting and Cardinality Know the number names and the counting sequence. Count to tell the number of objects. Compare numbers.	Operations and Algebraic Thinking Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	Numbers in Base Ten Work with numbers 11-19 to gain foundations for place value.
<p>K.CC.1 Count to 100 by ones and by tens. (<i>Count to 50</i>)</p> <p>K.CC.2 Count forward within 100 beginning from any given number other than 1. (<i>Count to 50</i>)</p> <p>K.CC.3 Write numerals from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). (<i>Numbers to 20</i>)</p> <p>K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality using a variety of objects including pennies. (<i>Numbers to 20</i>)</p> <ol style="list-style-type: none"> When counting objects, establish a one-to-one relationship by saying the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. Understand that the last number name 	<p>K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds such as claps, acting out situations, verbal explanations, expressions, or equations. Drawings need not show details, but should show the mathematics in the problem. (This applies whenever drawings are mentioned in the Standards.)</p> <p>K.OA.2 Solve addition and subtraction problems (written or oral), and add and subtract within 10 by using objects or drawings to represent the problem. (<i>Numbers to 10</i>)</p> <p>K.OA.3 Decompose numbers and record compositions for numbers less than or equal to 10 into pairs in more than one way by using objects and, when appropriate, drawings or equations.</p> <p>K.OA.4 For any number from 1 to 9, find the number that makes 10 when added to the</p>	<p>K.NBT.1 Compose and decompose numbers from 11 to 19 into a group of ten ones and some further ones by using objects and, when appropriate, drawings or equations; understand that these numbers are composed of a group of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.</p>



<p>said tells the number of objects counted and that the number of objects is the same regardless of their arrangement or the order in which they were counted.</p> <p>c. Understand that each successive number name refers to a quantity that is one larger.</p> <p>K.CC.5 Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects. (<i>Numbers to 20</i>)</p> <p>K.CC.6 Orally identify (without using inequality symbols) whether the number of objects in one group is greater/more than, less/fewer than, or the same as the number of objects in another group, not to exceed 10 objects in each group. (<i>Groups up to 20</i>)</p> <p>K.CC.7 Compare (without using inequality symbols) two numbers between 0 and 10 when presented as written numerals. (<i>Groups/ Numbers to 20</i>)</p>	<p>given number, e.g., by using objects or drawings, and record the answer with a drawing or, when appropriate, an equation.</p> <p>K.OA.5 Fluently ^G add and subtract within 5.</p>	
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Standards taught during 4th Quarter				
Counting and Cardinality Know the number names and the counting sequence.	Operations and Algebraic Thinking Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	Numbers in Base Ten Work with numbers 11-19 to gain foundations for place value.	Measurement and Data Identify, describe, and compare measurable attributes.	Geometry Identify and describe shapes (square, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, spheres). Describe, compare, create, and compose shapes.
<p>K.CC.1 Count to 100 by ones and by tens. <i>(Numbers to 100)</i></p> <p>K.CC.2 Count forward within 100 beginning from any given number other than 1. <i>(Numbers to 100)</i></p>	<p>K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds such as claps, acting out situations, verbal explanations, expressions, or equations. Drawings need not show details, but should show the mathematics in the problem. (This applies whenever drawings are mentioned in the Standards.)</p> <p>K.OA.2 Solve addition and subtraction problems (written or oral), and add and subtract within 10 by</p>	<p>K.NBT.1 Compose and decompose numbers from 11 to 19 into a group of ten ones and some further ones by using objects and, when appropriate, drawings or equations; understand that these numbers are composed of a group of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.</p>	<p>K.MD.1 Identify and describe measurable attributes (length, weight and height) of a single object using vocabulary terms such as long/short, heavy/light, or tall/short.</p>	<p>K.G.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as <i>above, below, beside, in front of, behind, and next to</i>.</p> <p>K.G.2 Correctly name shapes regardless of their orientations or overall size.</p> <p>K.G.3 Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).</p>



	<p>using objects or drawings to represent the problem. <i>(Numbers to 10)</i></p> <p>K.OA.3 Decompose numbers and record compositions for numbers less than or equal to 10 into pairs in more than one way by using objects and, when appropriate, drawings or equations.</p> <p>K.OA.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or, when appropriate, an equation.</p> <p>K.OA.5 Fluently ^G add and subtract within 5.</p>			<p>K.G.4 Describe and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their commonalities, differences, parts and other attributes.</p> <p>K.G.5 Model shapes in the world by building shapes from components e.g., sticks and clay balls, and drawing shapes.</p> <p>K.G.6 Combine simple shapes to form larger shapes.</p>
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