

Sample Scope and Sequence for Kindergarten for the Common Core State Standards for Mathematics

In Kindergarten students will concentrate on number. They will use numbers to represent quantities and to solve quantitative problems. Through the study of number students will develop cardinality, counting strategies, and strategies for joining and separating within 10 and to make ten. Students will use positional words, descriptive words, and mathematical terms to tell about their physical world. The Kindergarten year outlined in this scope and sequence document begins with developing strategies for counting by ones. In the first unit students count to 10. In subsequent units students build on this understanding to expand counting to 12, then 20, then 50, and, finally 100. By the end of Kindergarten, students count to 100 by ones and by tens. The concept of number builds as the year proceeds. Students will be able to read, write and represent quantities to 20. They compare quantities and numerals up to 10. As Kindergarten students develop their ability to compose and decompose numbers, they learn to fluently add and subtract within 5. A second critical area for kindergarten is geometry-describing shapes and space. Geometrical ideas are developed throughout the Kindergarten year. The year begins with describing location and position of shapes. Later students classify, compare and count 2-D and 3-D shapes. Finally, they compose and create shapes.

This scope and sequence assumes 160 days for instruction, divided among 16 units. The units are sequenced in a way that we believe best develops and connects the mathematical content described in the Common Core State Standards for Mathematics; however, the order of the standards included in any unit does not imply a sequence of content within that unit. Some standards may be revisited several times during the course; others may be only partially addressed in different units, depending on the mathematical focus of the unit. The standards are meant to be viewed as connected ideas that build understanding of key mathematical concepts.

Throughout Kindergarten, students should continue to develop proficiency with the Common Core's eight Standards for Mathematical Practice:

- 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.**
- 4. Model with mathematics.**
- 5. Use appropriate tools strategically.**
- 6. Attend to precision.**
- 7. Look for and make use of structure.**
- 8. Look for and express regularity in repeated reasoning.**

These practices should become the natural way in which students come to understand and to do mathematics. While, depending on the content to be understood or on the problem to be solved, any practice might be brought to bear, some practices may prove more useful than others. Opportunities for highlighting certain practices are indicated in different units of study in this sample scope and sequence, but this highlighting should not be interpreted to mean that other practices should be neglected in those units.

This scope and sequence reflects our current thinking related to the intent of the CCSS for Mathematics, but it is an evolving document. We expect to make refinements to this scope and sequence in the coming months in response to new learnings about the standards. In planning your district's instructional program, you should be prepared to have similar flexibility in implementing your district's own scope and sequence for the next 2 to 3 year, as you transition from your state's current standards to full implementation of the CCSS for Mathematics.

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Unit	Standards for Mathematical Content	Standards for Mathematical Practice	Days	Comments
Developing strategies for counting by ones to 10	<p>K.CC.1 (Count to 100 by ones and by tens.) [Comment]</p> <p>K.CC.4 (Understand the relationship between numbers and quantities; connect counting to cardinality.) [Comment]</p> <p>a. When counting objects, say 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.</p> <p>b. Understand that the last number name said tells the number of objects counted. 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.) [Comment]</p>	<ol style="list-style-type: none"> 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. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. <u>Look for and make use of structure.</u> 8. Look for and express regularity in repeated reasoning. 	7	<p>K.CC.1 This unit focuses on counting to ten by ones.</p> <p>K.CC.4 Students learn the number names and the sequence for numbers through ten.</p> <p>K.CC.5 Students count up to 10 things. There is no expectation at this point that every student will be able to count objects in all configurations specified in this standard.</p>

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Describing location and position	<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</i>, <i>below</i>, <i>beside</i>, <i>in front of</i>, <i>behind</i>, and <i>next to</i>.)</p> <p>K.G.2 (Correctly name shapes regardless of their orientations or overall size.) [Comment]</p>	<ol style="list-style-type: none"> 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. 4. <u>Model with mathematics.</u> 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 	10	<p>K.G.2 Students are focused on only correct names for shapes, and not on orientation or overall size at this point.</p>
Counting and writing numbers to 12	<p>K.CC.1 [Comment]</p> <p>K.CC.3 (Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).) [Comment]</p> <p>K.CC.4.a.b.c</p> <p>K.CC.5</p>	<ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. <u>Reason abstractly and quantitatively.</u> 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. <u>Look for and make use of structure.</u> 8. Look for and express regularity in repeated reasoning. 	12	<p>K.CC.1 Students count and represent numbers with numerals up to 12.</p> <p>K.CC.3 Students learn that 0 represents a count of no objects. They write numbers from 0-12.</p> <p>K.CC.5 Students count to answer "how many" up to 12 objects.</p>

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Unit	Standards for Mathematical Content	Standards for Mathematical Practice	Days	Comments
Comparing numbers to 12	<p>K.CC.3 [Comment] K.CC.5 [Comment] K.CC.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, e.g., by using matching and counting strategies.¹) ¹Include groups with up to ten objects. K.CC.7 (Compare two numbers between 1 and 10 presented as written numerals.)</p>	<p>1. Make sense of problems and persevere in solving them. 2. <u>Reason abstractly and quantitatively.</u> 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. <u>Look for and make use of structure.</u> 8. Look for and express regularity in repeated reasoning.</p>	10	<p>K.CC.3 Students represent up to 12 objects with a numeral. K.CC.5 Students count up to 12 objects and count out up to 12 objects.</p>
Sorting and classifying by attributes	<p>K.CC. 1 K.CC.4.a K.MD.1 (Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.) K.MD.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. <i>For example, directly compare the heights of two children and describe one child as taller/shorter.</i>) K.MD.3 (Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.³) ³Limit category counts to be less than or equal to 10.</p>	<p>1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. <u>Construct viable arguments and critique the reasoning of others.</u> 4. Model with mathematics. 5. Use appropriate tools strategically. 6. <u>Attend to precision.</u> 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.</p>	11	<p>K.CC. 1 Students continue to count and use one-to-one correspondence up to 12. K.MD.1 They describe measurable attributes of objects and directly compare two objects, but do not at this time describe several measurable attributes of a single object. K.MD. 2 Students compare two objects, but do not yet describe the difference. K.MD. 3 Students classify objects into given categories and count how many (up to 10) in each category. Students do not yet sort the categories by count.</p>

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Unit	Standards for Mathematical Content	Standards for Mathematical Practice	Days	Comments
Counting and Representing Quantities to 20	<p>K.CC.1 K.CC.2 (Count forward beginning from a given number within the known sequence (instead of having to begin at 1).) K.CC.3 K.CC.4.a.b.c K.CC.5</p>	<p>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. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.</p>	9	K.CC. 1 Students count to 20
Using 2-D and 3-D Geometry	<p>K.MD.1 K.MD.2 K.MD.3 K.G.1 K.G.2 K.G.3 (Identify shapes as two-dimensional (lying in a plane, “flat”) or three- dimensional (“solid”).) K.G.4 (Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).)</p>	<p>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. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.</p>	11	<p>K.MD.1, K.MD. 2 These measurement standards are focused on attributes of 2- and 3-D objects. At this time students describe several measurable attributes.</p> <p>K.G. 4 At this time students are not expected to analyze parts and attributes of shapes.</p>

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Unit	Standards for Mathematical Content	Standards for Mathematical Practice	Days	Comments
Adding whole numbers	<p>K.OA.1 (Represent addition and subtraction with objects, fingers, mental images, drawings², sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.) ²Drawings need not show details, but should show the mathematics in the problem.</p> <p>K.OA.2 (Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.)</p> <p>K.OA.3 (Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$.)</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 equation.)</p> <p>K.OA.5 (Fluently add and subtract within 5.)</p>	<ol style="list-style-type: none"> 1. <u>Make sense of problems and persevere in solving them.</u> 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. <u>Look for and express regularity in repeated reasoning.</u> 	10	<p>K.OA. 1 The focus in this unit is on addition. Students will see equations modeled, but are not expected to write them.</p> <p>K.OA. 2 Students solve addition problems using objects.</p> <p>K.OA. 3 Students are not expected to use equations.</p> <p>K.OA. 4 Students begin to develop strategies to make a ten, but are not expected to know all combinations at this point.</p> <p>K.OA.5 Students focus only on addition within 5, but fluency is not expected at this point.</p>
Subtracting Whole Numbers	<p>K.OA.1</p> <p>K.OA.2</p> <p>K.OA.3</p> <p>K.OA.4</p> <p>K.OA.5</p>	<ol style="list-style-type: none"> 1. <u>Make sense of problems and persevere in solving them.</u> 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 	11	<p>Students see equations modeled, but are not expected to write them. Students solve subtraction problems within 10 using objects. They continue to develop strategies to decompose 10 or less. Students add and subtract within 5, though not fluently.</p>

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Unit	Standards for Mathematical Content	Standards for Mathematical Practice	Days	Comments
Counting to 50	K.CC.1 K.CC.2 K.CC.3 K.CC.4.c	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. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.	5	K.CC. 1 Students recognize and use number patterns to count to 50 by tens and ones (rote counting).

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Unit	Standards for Mathematical Content	Standards for Mathematical Practice	Days	Comments
Measuring and Comparing Length and Weight	K.MD.1 K.MD.2	<ol style="list-style-type: none"> 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. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. <u>Attend to precision.</u> 7. Look for and make use of structure. 8. <u>Look for and express regularity in repeated reasoning.</u> 	13	
Making Combinations of 10	K.CC.7 K.OA.3 K.OA.4	<ol style="list-style-type: none"> 1. <u>Make sense of problems and persevere in solving them.</u> 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. <u>Look for and express regularity in repeated reasoning.</u> 	12	K.OA.3, K.OA. 4The writing of equations is encouraged, but it is not required.

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Unit	Standards for Mathematical Content	Standards for Mathematical Practice	Days	Comments
Composing and Decomposing 11 through 19	K.NBT.1 (Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.)	<ol style="list-style-type: none"> 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. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 	10	
Counting and Using Number Patterns to 100	K.CC.1 K.CC.2 K.CC.4.c	<ol style="list-style-type: none"> 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. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 	10	K.CC. 1 Students rote count to 100 by ones and tens.

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Making and Comparing Shapes	<p>K.G.4 K.G.5 (Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.) K.G.6 (Compose simple shapes to form larger shapes. <i>For example, "Can you join these two triangles with full sides touching to make a rectangle?"</i>)</p>	<ol style="list-style-type: none"> 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. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 	9	
Solving Addition and Subtraction Problems	<p>K.OA.1 K.OA.2 K.OA.3 K.OA.4 K.OA.5</p>	<ol style="list-style-type: none"> 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. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 	10	