# Sequenced Units for the Common Core State Standards in Mathematics
## Kindergarten

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 an understanding of 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 talk about their physical world.

The Kindergarten year outlined in this document begins with developing strategies for counting by ones. In the first unit, students count to 20. In subsequent units, students build on this understanding to expand counting to 50 and 100. By the end of Kindergarten, students count to 100 by ones and 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. Students in Kindergarten use counting strategies to add and subtract within ten. As Kindergarten students develop their ability to compose and decompose numbers, they learn to fluently add and subtract within 5. Another major focus in Kindergarten is using both informal and geometric language to describe shapes and space. Geometric concepts and spatial reasoning are developed throughout the Kindergarten year as students progress from informal conversations and activities to more formal classifications and compositions of shapes.

This document reflects our current thinking related to the intent of the Common Core State Standards for Mathematics (CCSSM) and assumes 160 days for instruction, divided among 16 units. The number of days suggested for each unit assumes 45-minute class periods and is included to convey how instructional time should be balanced across the year. The units are sequenced in a way that we believe best develops and connects the mathematical content described in the CCSSM; 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 focus of the unit. Strikethroughs in the text of the standards are used in some cases in an attempt to convey that focus, and comments are included throughout the document to clarify and provide additional background for each unit.

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 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 in this document, but this highlighting should not be interpreted to mean that other practices should be neglected in those units.

When using this document to help in planning your district's instructional program, you will also need to refer to the CCSSM document, relevant progressions documents for the CCSSM, and the appropriate assessment consortium framework.

# Sequenced Units for the Common Core State Standards in Mathematics
## Kindergarten

| Unit 1: Rote counting and understanding amount counted | Suggested number of days: 10 |
|---|---|

To start the year, Kindergarteners practice the count sequence and start to develop understanding of cardinality and one-to-one correspondence. Counting is started early and practiced often throughout the year because becoming fluent in the counting sequence enables students to focus on pairings involved when counting objects.[1] This unit focuses on children organizing objects in lines to count effectively. More difficult arrangements will be addressed in subsequent units.

| Common Core State Standards for Mathematical Content | Comments |
|---|---|
| **Counting and Cardinality—K.CC**<br>A. Know number names and the count sequence.<br>　1. Count ~~to 100~~ by ones ~~and by tens~~.<br><br>B. Count to tell the number of objects.<br>　4. Understand the relationship between numbers and quantities; connect counting to cardinality.<br><br>　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.<br><br>　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.~~<br><br>**Common Core State Standards for Mathematical Practice**<br><br>2. Reason abstractly and quantitatively. | **K.CC.A.1** is developed throughout the year. The target for this unit is counting to 20 by ones, but this number should not be a limit. It is crucial that students know the number names and count sequence and incorporate counting in daily activities in the classroom.<br><br>The target of **K.CC.B.4a** in this unit is for students to count up to 10 objects accurately. Students need time to count small quantities to develop one-to-one correspondence and cardinality.<br><br>**K.CC.B.4b** is repeated in full in unit 2 to establish conservation of number.<br><br><br><br>Students are working to make the connection between the (verbal) number names and quantities (**MP.2**). |

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[1] For additional information, see page 4 in the Counting and Cardinality progressions document.

# Sequenced Units for the Common Core State Standards in Mathematics
# Kindergarten

| Unit 2: Writing numbers and counting "How many?" within 10 | Suggested number of days: 10 |
|---|---|

Extending their work with the counting sequence in the previous unit, students now write numerals and represent a number of objects. The focus of this unit is connecting written numerals to quantities, furthering students' understanding of one-to-one correspondence. They usually indicate their understanding of this one-to-one correspondence by pointing to the objects or moving them as they say the numbers, pairing each number name with one and only one object.[2]

| Common Core State Standards for Mathematical Content | Comments |
|---|---|
| **Counting and Cardinality—K.CC**<br><br>A. Know number names and the count sequence.<br>  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).~~<br><br>B. Count to tell the number of objects.<br>  4. Understand the relationship between numbers and quantities; connect counting to cardinality.<br>    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.<br>  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~~.<br><br>**Common Core State Standards for Mathematical Practice**<br><br>6. Attend to precision. | The focus of **K.CC.A.3** in this unit is for students to write the numerals 0-10. They will be writing numerals 11-20 in unit 8.<br><br>**K.CC.B.5** emphasize the practice of counting accurately when objects are organized in different arrangements. Students start by organizing up to 10 objects in a straight line. Other arrangements will be addressed in unit 3 and unit 7.<br><br>Students attend to precision in both their explanations and particular strategies they use to count (**MP.6**). |

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[2] For additional perspectives, see page 4 in the Counting and Cardinality progressions document.

# Sequenced Units for the Common Core State Standards in Mathematics
## Kindergarten

| Unit 3: Classifying and counting objects | Suggested number of days: 10 |
|---|---|

The focus of this unit is sorting and classifying objects into given categories (with up to 10 objects in each group) and using positional language to describe the objects. Students develop geometric concepts and spatial reasoning from experience describing (informally) the shape of objects and the relative positions of objects. Students need practice using their informal language to develop effective use of vocabulary and to develop geometrical perspectives.[3]

This context of classifying objects supports continued development of counting skills. In this unit students continue counting within 10 and writing numerals 0-10 to represent quantities of objects in the various categories.

| Common Core State Standards for Mathematical Content | Comments |
|---|---|
| **Counting and Cardinality—K.CC**<br>B. Count to tell the number of objects.<br>  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.<br><br>**Measurement and Data—K.MD**<br>B. Classify objects and count the number of objects in each category.<br>  3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. [3]<br>  NOTE: [3]Limit category counts to be less than or equal to 10.<br><br>**Geometry—K.G**<br>A. Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).<br>  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*.<br><br>**Common Core State Standards for Mathematical Practice**<br><br>1. Make sense of problems and persevere in solving them.<br><br>3. Construct viable arguments and critique the reasoning of others. | When addressing **K.CC.B.5**, it is important that children count accurately when objects are organized in different arrangements. They start by organizing up to 10 objects organized in a straight line or in a rectangular array. Other arrangements will be addressed unit 7.<br><br>In this unit **K.G.A.1** calls for students to begin with familiar objects in their environment. Development of spatial reasoning is the focus of this unit. Students will describe objects using the formal names of the shapes in unit 5.<br><br><br>Students make sense of the problems by counting and recounting (**MP.1**) and then communicate this understanding by justifying their strategies and reasoning (**MP.3**). |

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[3] For additional information, see page 6 in the Geometry progressions document.

# Sequenced Units for the Common Core State Standards in Mathematics
## Kindergarten

| Unit 4: Understanding and representing addition within 5 | Suggested number of days: 10 |
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This unit connects students' experience with counting to joining groups of objects. Students begin by modeling addition situations using concrete models and counting strategies to make sense of adding to and putting together. Students will likely use their fingers to keep track of the addends, so it is beneficial for students to develop rapid visual recognition of the numbers 0-5 on their fingers.[4] Teachers are encouraged to use addition and subtraction equations to model the situations, but students are not required to use equations until Grade 1.[5]

| Common Core State Standards for Mathematical Content | Comments |
|---|---|
| **Counting and Cardinality—K.CC**<br>B. Count to tell the number of objects.<br>    4. Understand the relationship between numbers and quantities; connect counting to cardinality.<br>       c. Understand that each successive number name refers to a quantity that is one larger.<br><br>**Operations and Algebraic Thinking—K.OA**<br>A. Understand addition as putting together and adding to, and under- stand subtraction as taking apart and taking from.<br>    1. Represent addition and subtraction with objects, fingers, mental images, drawings[2], sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.<br>      NOTE: [2]Drawings need not show details, but should show the mathematics in the problem. (This applies wherever drawings are mentioned in the Standards.)<br><br>**Common Core State Standards for Mathematical Practice**<br><br>1. Make sense of problems and persevere in solving them.<br><br>4. Model with mathematics. | The emphasis of **K.OA.A.1** in this unit is for students to represent the addition situations of putting together and adding to. Subtraction will be addressed in unit 7.<br><br><br>Students practice explaining their drawings and discuss how different drawings are similar and different (**MP.1**).[6] |

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[4] For additional perspectives of students' use of their fingers, see page 8 of the Counting and Cardinality progressions document.

[5] For additional information, see page 9 in the Common Core State Standards for Mathematics.

[6] For additional information, see page 11 in the Operations and Algebraic Thinking progressions document.

# Sequenced Units for the Common Core State Standards in Mathematics
## Kindergarten

| Unit 5: Identifying and describing shapes | Suggested number of days: 10 |
|---|---|

In this unit students build on their previous work with spatial reasoning, using both positional relationships and formal names of shapes. While discussing the different attributes of shapes, students will model these shapes using concrete materials. Although some students may draw some of these shapes, it is not a requirement in this unit.

| Common Core State Standards for Mathematical Content | Comments |
|---|---|
| **Geometry—K.G**<br>A. Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).<br>  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*.<br>  2. Correctly name shapes regardless of their orientations or overall size.<br><br>B. Analyze, compare, create, and compose shapes.<br>  5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) ~~and drawing shapes~~.<br><br>**Common Core State Standards for Mathematical Practice**<br><br>2. Reason abstractly and quantitatively.<br><br>7. Look for and make use of structure. | **K.G.B.5** will be revisited in unit 15 in which students will also be expected to draw shapes.<br><br><br>Mathematically proficient students look closely to discern a pattern or structure (**MP.7**) and have the ability to abstract a given situation (**MP.2**).[7] |

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[7] For additional information, see page 6 in the Geometry progressions document.

# Sequenced Units for the Common Core State Standards in Mathematics
## Kindergarten

| Unit 6: Adding and subtracting within 5 | Suggested number of days: 12 |
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In this unit students apply counting strategies and their experience with addition to develop understanding of subtraction as they encounter problems involving taking apart and taking from situations.[8]

Students will add and subtract using Level 1 methods (*Direct Modeling by Counting All or Taking Away*), representing the situation or numerical problem with groups of objects, a drawing, or fingers.[9] Put Together/Take Apart situations with Both Addends Unknown are important because they allow Kindergarteners to explore various compositions and decompositions of each number.[10] This supports development of addition and subtraction concepts.

| Common Core State Standards for Mathematical Content | Comments |
|---|---|
| **Operations and Algebraic Thinking—K.OA**<br>A. Understand addition as putting together and adding to, and under- stand subtraction as taking apart and taking from.<br>  1. Represent addition and subtraction with objects, fingers, mental images, drawings[2], sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.<br>    NOTE: [2]Drawings need not show details, but should show the mathematics in the problem. (This applies wherever drawings are mentioned in the Standards.)<br>  2. Solve addition and subtraction word problems, and add and subtract ~~within 10~~, e.g., by using objects or drawings to represent the problem.<br>  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).<br><br>**Common Core State Standards for Mathematical Practice**<br><br>4. Model with mathematics.<br><br>5. Use appropriate tools strategically. | **K.OA.A.1** was introduced in unit 4. This standard is extended in this unit to address both addition and subtraction situations.<br><br>The goal of **K.OA.A.2** in this unit is to solve addition and subtraction situations within 5. Students will extend this number range in unit 10 to addition and subtraction situations within 10.<br><br>**K.OA.A.3** requires time for students to experiment with various compositions and decompositions of smaller numbers (within 5) before working with larger numbers.<br><br><br><br><br>Students use manipulatives and drawings (**MP.5**) to model the given situation (**MP.4**). |

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[8] For additional information, see page 6 in the Operations and Algebraic Thinking progressions document.
[9] For more information on the Level 1 methods, see page 36 in the Operations and Algebraic Thinking progressions document.
[10] For additional information, see page 10 in the Operations and Algebraic Thinking progressions document.

# Sequenced Units for the Common Core State Standards in Mathematics
## Kindergarten

| Unit 7: Rote counting to 50 and representing up to 20 objects | Suggested number of days: 10 |
|---|---|

In this unit students extend the counting sequence to 50 and develop their ability to represent up to 20 objects both numerically and visually. This includes effectively counting objects in more difficult configurations—e.g. in a circle.

| Common Core State Standards for Mathematical Content | Comments |
|---|---|
| **Counting and Cardinality—K.CC**<br>A. Know number names and the count sequence.<br>   1. Count ~~to 100~~ by ones ~~and by tens~~.<br><br>   2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).<br><br>   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).<br><br>B. Count to tell the number of objects.<br>   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.<br><br>**Common Core State Standards for Mathematical Practice**<br><br>6. Attend to precision.<br><br>7. Look for and make use of structure. | The target for **K.CC.A.1** in this unit is rote counting to 50; however, this number should not be a limit.<br><br>**K.CC.A.2** is a prerequisite for counting on strategy emphasized in Grade 1 (**1.OA.C.6**).<br><br>**K.CC.B.5** includes counting out a given number of objects, which is more difficult than just counting that many objects.[11]<br><br><br>Students should be given opportunities to discuss the structure of the number system (**MP.7**) and precisely express how they know that their count is accurate (**MP.6**) |

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[11] For more information, see page 4 of the Counting and Cardinality progressions document.

| Unit 8: Describing and comparing measurable attributes | Suggested number of days: 10 |
|---|---|

In this unit students explore non-standard measurement concepts using comparative and descriptive vocabulary. Through conversation, students learn to identify and distinguish different measurable attributes. [12]

| Common Core State Standards for Mathematical Content | Comments |
|---|---|
| **Measurement and Data—K.MD**<br>A. Describe and compare measurable attributes.<br>    1. Describe measurable attributes of objects, such as length or weight.<br>       Describe several measurable attributes of a single object.<br><br>    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.*<br><br>**Common Core State Standards for Mathematical Practice**<br><br>3. Construct viable arguments and critique the reasoning of others.<br><br>5. Use appropriate tools strategically. | Students use comparative language to justify their conclusions (**MP.3**) and why and how they use particular tools to measure and compare lengths (**MP.5**). |

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[12] For additional information, see pages 6-7 in the Geometric Measurement progressions document.

# Sequenced Units for the Common Core State Standards in Mathematics
## Kindergarten

| Unit 9: Comparing numbers | Suggested number of days: 10 |
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This unit focuses on students identifying which of two groups of objects has more than the other or if the two groups have the same number of objects. They can then use this understanding or their understanding of the counting sequence to compare numbers between 1 and 10 presented as written numerals. [13]

| Common Core State Standards for Mathematical Content | Comments |
|---|---|
| **Counting and Cardinality—K.CC**<br>C. Compare numbers.<br>    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]<br>    NOTE: [1]Include groups with up to ten objects.<br><br>    7. Compare two numbers between 1 and 10 presented as written numerals.<br><br>**Common Core State Standards for Mathematical Practice**<br><br>2. Reason abstractly and quantitatively. | **K.CC.C.6** calls for students to have practice working with concrete objects when comparing. This develops understanding of the relationship between quantities and written numerals.<br><br>In **K.CC.C.7** students can use their experience with counting concrete objects and the counting sequence to compare two written numerals. Note that students will use language to describe these comparisons. Mathematical symbols will be introduced in Grade 1.<br><br><br>Students connect concrete representations of numbers to the written numerals (**MP.2**) |

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[13] For additional perspectives, see pages 4-5 in the Counting and Cardinality progressions document.

| Unit 10: Understanding addition and subtraction within 10 | Suggested number of days: 12 |
|---|---|

In this unit students extend their understanding from unit 6 to include addition and subtraction up to 10.

Put Together/Take Apart situations with Both Addends Unknown are important because they allow Kindergarteners to explore various compositions and decompositions of each number.[14] Practice with composing and decomposing numbers supports the development of subitizing and numeric reasoning. This is essential to developing more sophisticated addition and subtraction strategies this year and in later grades.

| Common Core State Standards for Mathematical Content | Comments |
|---|---|
| **Operations and Algebraic Thinking—K.OA**<br>A. Understand addition as putting together and adding to, and under- stand subtraction as taking apart and taking from.<br>  1. Represent addition and subtraction with objects, fingers, mental images, drawings[2], sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.<br>  NOTE: [2]Drawings need not show details, but should show the mathematics in the problem. (This applies wherever drawings are mentioned in the Standards.)<br><br>  2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.<br><br>  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 $5 = 4 + 1$).<br><br>**Common Core State Standards for Mathematical Practice**<br><br>4. Model with mathematics.<br><br>5. Use appropriate tools strategically.<br><br>6. Attend to precision. | In this unit **K.OA.A.1** is included to emphasize the relationship between addition and subtraction using various strategies.[15]<br><br>**K.OA.A.3** is foundational for addition and subtraction strategies in Grade 1 (**1.OA.C.6**).<br><br><br><br>Students model addition and subtraction situations (**MP.4**) by using objects, their fingers, and math drawings (**MP.5**). Students should also explain their strategies explicitly and discuss similarities and differences with other strategies (**MP.6**). |

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[14] For additional information, see page 10 in the Operations and Algebraic Thinking progressions document.

[15] For additional information on the types of strategies students may use, see pages 10-11 in the Operations and Algebraic Thinking progressions document.

# Sequenced Units for the Common Core State Standards in Mathematics
# Kindergarten

| Unit 11: Classifying two- and three-dimensional shapes | Suggested number of days: 10 |
|---|---|

In this unit students continue to develop the concept of classifying and counting objects—this time in the context of classifying two- and three-dimensional shapes.

| Common Core State Standards for Mathematical Content | Comments |
|---|---|
| **Measurement and Data—K.MD**<br>B. Classify objects and count the number of objects in each category.<br>    3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. [3]<br>      NOTE: [3]Limit category counts to be less than or equal to 10.<br><br>**Geometry—K.G**<br>A. Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).<br>    3. Identify shapes as two-dimensional (lying in a plane, "flat") or three- dimensional ("solid").<br><br>B. Analyze, compare, create, and compose shapes.<br>    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).<br><br>**Common Core State Standards for Mathematical Practice**<br><br>3. Construct viable arguments and critique the reasoning of others.<br><br>7. Look for and make use of structure. | **K.MD.B.3** is repeated here to provide students the opportunity to practice classifying objects in the context of geometric figures.<br><br>**K.G.B.4** includes students identifying faces of three-dimensional shapes as two-dimensional geometric figures.[16]<br><br><br>Students look for similarities and differences (**MP.7**) and present their own arguments and respond to the arguments of others (**MP.3**). |

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[16] For additional information, see page 6 in the Geometry progressions document.

# Sequenced Units for the Common Core State Standards in Mathematics
## Kindergarten

| Unit 12: Composing ten | Suggested number of days: 10 |
|---|---|
| In this unit students use objects and drawings to identify partners for any number 1 to 9 to compose ten. Composing ten is a foundation for understanding the base-ten system that will develop in later grades, and during this unit teachers help children prepare for this by drawing special attention to the number 10.[17] | |

| Common Core State Standards for Mathematical Content | Comments |
|---|---|
| **Operations and Algebraic Thinking—K.OA**<br>A. Understand addition as putting together and adding to, and under- stand subtraction as taking apart and taking from.<br>  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.<br><br>**Common Core State Standards for Mathematical Practice**<br><br>7. Look for and make use of structure.<br><br>8. Look for and express regularity in repeated reasoning. | **K.OA.A.4** is foundational for addition and subtraction strategies in Grade 1 (**1.OA.C.6**).<br><br><br>Students look for shortcuts by analyzing patterns to find all of the combinations that make 10 (**MP.7, MP.8**). |

| Unit 13: Counting to 100 by ones and tens | Suggested number of days: 5 |
|---|---|
| The focus of this unit is to finalize the counting sequence to 100 and introduce the pattern of counting by *tens*. | |

| Common Core State Standards for Mathematical Content | Comments |
|---|---|
| **Counting and Cardinality—K.CC**<br>A. Know number names and the count sequence.<br>  1. Count to 100 by ones and by tens.<br>  2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).<br><br>**Common Core State Standards for Mathematical Practice**<br><br>7. Look for and make use of structure.<br><br>8. Look for and express regularity in repeated reasoning. | **K.CC.A.2** is repeated here to provide an opportunity to extend this ability of counting from a given number with this new range of numbers.<br><br><br>Students discover and explain patterns in the number system and apply this understanding to counting (**MP.7**, **MP.8**). |

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[17] For additional perspectives about the focus on *tens*, see page 5 in the Number and Operations in Base Ten progressions document.

# Sequenced Units for the Common Core State Standards in Mathematics
## Kindergarten

| Unit 14: Developing foundations of place value | Suggested number of days: 11 |
|---|---|

The focus of this unit is building a foundational understanding of the base-ten system by developing an understanding of the teen numbers as being composed of ten ones and some more ones.[18] The number range in this standard emphasizes the understanding of *ten ones* rather than an understanding of the *tens* "place". This work is an opportunity for students to start counting on, which is a Level 2 strategy for addition that will be emphasized in Grade 1. Teachers are encouraged to use addition and subtraction equations to model the situations, but students are not required to use equations until Grade 1.[19]

| Common Core State Standards for Mathematical Content | Comments |
|---|---|
| **Number and Operations in Base Ten—K.NBT**<br>A. Work with numbers 11–19 to gain foundations for place value.<br> 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. | **K.NBT.A.1** is a precursor for further development of place value understanding in Grade 1—viewing ten ones as a new unit called a *ten* (**1.NBT.B.2a,b**). |
| **Common Core State Standards for Mathematical Practice**<br><br>4. Model with mathematics.<br><br>7. Look for and make use of structure. | Students explore the structure of ten ones and some more ones (**MP.7**) using various strategies—such as ten-frames—to model the "teen" numbers (**MP.4**). |

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[18] For additional information on kindergartners' understanding of teen numbers, see page 5 in the Number and Operations in Base Ten progressions document.

[19] For additional information, see page 9 of the Common Core State Standards for Mathematics.

| Unit 15: Modeling and composing shapes | Suggested number of days: 10 |
|---|---|

In this unit students extend their understanding of creating and composing shapes to include drawing shapes. It is important for students to have opportunities for open exploration in composing shapes. For example, "What shape can you make with these two triangles?"

Students build understandings of shapes and their properties, becoming able to do increasingly elaborate compositions, decompositions, and iterations of the two.[20]

| Common Core State Standards for Mathematical Content | Comments |
|---|---|
| **Geometry—K.G**<br>B. Analyze, compare, create, and compose shapes.<br>　5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.<br><br>　6. Compose simple shapes to form larger shapes. *For example, "Can you join these two triangles with full sides touching to make a rectangle?"*<br><br>**Common Core State Standards for Mathematical Practice**<br><br>4. Model with mathematics.<br><br>6. Attend to precision. | **K.G.B.5** is repeated in this unit to extend students' understanding of creating shapes to include drawing.<br><br><br><br>With repeated experiences with modeling these shapes (**MP.4**), students become more precise in their compositions and descriptions of shapes (**MP.6**). |

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[20] For additional information, see pages 5-6 of the Geometry progressions document.

# Sequenced Units for the Common Core State Standards in Mathematics
# Kindergarten

| Unit 16: Solving problems and demonstrating fluency within 5 | Suggested number of days: 10 |
|---|---|

This unit finalizes addition and subtraction problem solving within 10 and fluency within 5.

By the end of Kindergarten, students should have experience with four of the problem types in Table 1 on page 88 in the Common Core State Standards for Mathematics: [21]

- Add To with Result Unknown

- Take From with Result Unknown

- Put Together/Take Apart with Total Unknown

- Put Together/Take Apart with Both Addends Unknown

| Common Core State Standards for Mathematical Content | Comments |
|---|---|
| **Operations and Algebraic Thinking—K.OA**<br>A. Understand addition as putting together and adding to, and under- stand subtraction as taking apart and taking from.<br>   2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.<br><br>   5. Fluently add and subtract within 5.<br><br><br><br>**Common Core State Standards for Mathematical Practice**<br><br>1. Make sense of problems and persevere in solving them.<br><br>8. Look for and express regularity in repeated reasoning. | Students work towards fluency with **K.OA.A.5** by relying on their experience with decompositions of numbers and with Add To and Take From situations.[22]<br><br><br><br>Students have developed strategies for solving addition and subtraction problems and should now be able to explain their own strategies and understand the approaches of others (**MP.1**). They recognize when calculations are repeated and look for both general methods and shortcuts (**MP.8**). |

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[21] For more information about which problem types are emphasized in Kindergarten, see pages 8-9 in the Operations and Algebraic Thinking progressions document.

[22] For additional information, see page 11 in the Operations and Algebraic Thinking progressions document.