Kindergarten Math
Units of Instruction
2019-2020

BOONE COUNTY SCHOOLS

ACHIEVING EXCELLENCE TOGETHER

Kindergarten Math

Priority Standards and
Instructional Unit 1

Kindergarten Math
Unit: 1

**This unit is designed to around these practice standards: Students notice repetition inherent in the counting sequence as they count to one hundred by ones and tens. For example, students notice "seven" follows "six," and "twenty-seven" follows "twenty-six" (MP.8). They describe how this pattern exists into new decade families. For example, thirtyseven follows thirty-six and so on. Students use this general pattern about how numbers are structured to count forward from any given number within the range of 0-100 (counting on) without the benefit of starting at "one" (MP.7). When counting objects within the range of 0-20, they understand they can communicate this total using words, for example "ten" and the numeral 10. (MP.2)

**Priority Standards will be summatively assessed throughout Quarter 1. All supporting standards are to be formatively assessed, driving reteaching and instructional adjustments to meet the needs of all students.

Counting and Cardinality

K.CC.1-Count **a.** Count to 100 by ones and by tens	Priority Standard

K.CC.3-Represent numbers.
    a. Write numbers from 0 to 20. *(to 10 this unit)*
    b. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). *(to 10 this unit)*
	Priority Standard

**This unit is designed to around these practice standards: Students connect number words

to quantities as they count collections of ten by ones and realize the last number stated in the sequence ("ten") refers to the total quantity of objects (cardinality). For example, when students count five blocks, the last word they say is "five" and therefore five is the total number of the collection (MP.2). Through repeated experiences of adding one counter to an existing collection, students see that the total is one more and know this is true every time another counter is added (MP.8). When encountering a collection of objects in various configurations (see clarification), students organize the objects in order to count each one only once and explain their strategy for counting and for ensuring they have counted each object once (MP.2, MP.3).

K.CC.4- Understand the relationship between numbers and quantities; connect counting to cardinality.
    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 on object.
    b. Understand the last number name said tells the number of objects counted. The number of object is the same regardless of their arrangement or the order in which they were counted.
    c. Understand that each successive number name refers to a quantity that is one larger.
	Priority Standard

K.CC.5- Given a number from 1-20, count out that many objects. *(to 10 this unit)*
    a. Count to answer "how many?" questions with as many as 20 things arranged in aline, a rectangular array, or a circle.
    b. Count to answer "how many?" questions with as many as 10 things in a scattered configuration.
	Priority Standard

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Priority Standards and Instructional Unit 2

Kindergarten Math
Unit: 2

**This unit is designed to around these practice standards: Students connect number words to quantities as they count collections of ten by ones and realize the last number stated in the sequence ("ten") refers to the total quantity of objects (cardinality). For example, when students count five blocks, the last word they say is "five" and therefore five is the total number of the collection (MP.2). Through repeated experiences of adding one counter to an existing collection, students see that the total is one more and know this is true every time another counter is added (MP.8). When encountering a collection of objects in various configurations (see clarification), students organize the objects in order to count each one only once and explain their strategy for counting and for ensuring they have counted each object once (MP.2, MP.3).

**Priority Standards will be summatively assessed throughout Quarter 1. All supporting standards are to be formatively assessed, driving reteaching and instructional adjustments to meet the needs of all students.

Counting and Cardinality

K.CC.4-Understand the relationship between numbers and quantities; connect counting to cardinality.
   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.
   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.
   c. Understand that each successive number name refers to a quantity
	Priority Standard

that is one larger.	

K.CC.5-Given a number from 1-20, count out that many objects. **(to 10 this unit)**
    a. Count to answer "how many?" questions with as many as 20 things arranged in a line, a rectangular array, or a circle.
    b. Count to answer "how many?" questions with as many as 10 things in a scattered configuration.
	Priority Standard

K.CC.1a- Count a. Count to 100 by ones and by tens.	Priority Standard

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Priority Standards and Instructional Unit 3

Kindergarten Math
Unit: 3

**This unit is designed to around these practice standards: Students connect number words to quantities as they count collections of ten by ones and realize the last number stated in the sequence ("ten") refers to the total quantity of objects (cardinality). For example, when students count five blocks, the last word they say is "five" and therefore five is the total number of the collection (MP.2). Through repeated experiences of adding one counter to an existing collection, students see that the total is one more and know this is true every time another counter is added (MP.8). When encountering a collection of objects in various configurations (see clarification), students organize the objects in order to count each one only once and explain their strategy for counting and for ensuring they have counted each object once (MP.2, MP.3).	

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Counting and Cardinality

K.CC.2- Count forward beginning from a given number within the known sequence within 100. (instead of having to begin at 1)	Priority Standard

K.CC.3-Represent numbers. **(11-20 this unit)**
    a. Write numbers from 0 to 20.
    b. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).
	Priority Standard

K.CC.4-Understand the relationship between numbers and quantities; connect counting to cardinality.
 	
    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.
    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.
    c. Understand that each successive number name refers to a quantity that is one larger.
	Priority Standard

**This unit is designed to around these practice standards: Students use tools and models to interpret, represent and solve word problems. They make sense of addition and subtraction situations by selecting objects to represent the situation (MP.1) and represent the situations using an expression or equations (see clarifications) (MP.4). For example, students act out a story problem involving the eating of apples using cubes to represent each apple (MP.5). Students decomposed numbers into two subgroups in different ways and understand the subgroups do not need to be the same size, but combined they equal to original value (7) (MP.2). Students decompose a group of 7 objects into 3 and 4, 6 and 1, and 5 and 2. They write the related expressions (MP.4) and explain or show (using a balance or moving objects) these different arrangements are equal to each other and equal to 7 (MP.2). Students connect breaking apart 5 into 2 and 3, means 2 + 3 = 5. Beyond counting, students use visuals (dot patterns, five and ten frames) and tools such as counters and Rekenreks to determine sums within 5 and combinations of 10 (MP.5, MP.7). For example, students view a ten frame displaying 7 counters and see 3 more counters are needed to equal 10, or in seeing the sum 3 + 2 may visualize a dot pattern or notice 3 + 2 is 1 more than 2 + 2, a sum they know (MP.2).

Operations and algebraic Thinking

K.OA.2- Solve addition and subtraction word problems and add and subtract within 10 by using objects or drawings to represent the problem.	Priority Standard

K.OA.3- Decompose numbers less than or equal to 10.
    a. Decompose numbers in two groups in more than one way by using objects or drawings and record each decomposition by a drawing or equation.
    b. Use objects or drawing to demonstrate equality as the balancing of equalities.
	Priority Standards

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Priority Standards and Instructional Unit 4

Kindergarten Math
Unit: 4

**This unit is designed to around these practice standards:Students connect number words to quantities as they count collections of ten by ones and realize the last number stated in the sequence ("ten") refers to the total quantity of objects (cardinality). For example, when students count five blocks, the last word they say is "five" and therefore five is the total number of the collection (MP.2). Through repeated experiences of adding one counter to an existing collection, students see that the total is one more and know this is true every time another counter is added (MP.8). When encountering a collection of objects in various configurations (see clarification), students organize the objects in order to count each one only once and explain their strategy for counting and for ensuring they have counted each object once (MP.2, MP.3).

**Priority Standards will be summatively assessed throughout Quarter 1. All supporting standards are to be formatively assessed, driving reteaching and instructional adjustments to meet the needs of all students.

Counting and Cardinality

K.CC.3-Represent numbers. a. Write numbers from 0 to 20. b. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).	Priority Standard
K.CC.4- Understand the relationship between numbers and quantities; connect counting to cardinality. a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and	Priority Standard

each number name with one and only on object. b. Understand the last number name said tells the number of objects counted. The number of object is the same regardless of their arrangement or the order in which they were counted. c. Understand that each successive number name refers to a quantity that is one larger.	
K.CC.5- Given a number from 1-20, count out that many objects. **(11-20 this unit)** a. Count to answer "how many?" questions with as many as 20 things arranged in aline, a rectangular array, or a circle. b. Count to answer "how many?" questions with as many as 10 things in a scattered configuration.	Priority Standard

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Priority Standards and Instructional Unit 5

Kindergarten Math
Unit: 5

**This unit is designed to around these practice standards: Students know different strategies for comparing groups and choose a strategy such as counting, matching and pairing to compare two groups (MP.1). For example, when comparing a collection of red counters to a collection of blue counters, students count each group finding which has the greater number, pair off blues and reds to see which group has extras, or make two rows and line them up to see which is longer (MP.2). Once a determination has been made, students articulate their ideas using precise mathematical language such as "greater than," "less than," and "equal to" (MP.6, MP.3). When comparing two numerals, students move flexibly between symbols and their corresponding quantities, using objects or situations to help them reason about the relative size of each quantity (MP.2).	

**Priority Standards will be summatively assessed throughout Quarter 3. All supporting standards are to be formatively assessed, driving reteaching and instructional adjustments to meet the needs of all students.	

Counting and Cardinality

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.	Priority Standard
K.CC.7-Compare two numbers between 1 and 10 presented as written numerals.	Support Standard

K.CC.1- Count
    a. Count to 100 by ones and by tens
    b. Count backwards from 30 by ones
	Priority Standard

K.CC.2- Count forward beginning from a given number within the known sequence within 100 (instead of having to begin at 1)	<mark>Priority Standard</mark>
**This unit is designed to around these practice standards: Students use their understanding of attributes to sort objects in different ways. They justify their rules for sorting, listen to the ideas of others and when they are unsure or disagree, they question or challenge the observations (MP.3). As they describe attributes, students use precise shape or measurement language such as "has all straight sides" or "is shorter than a new pencil" (MP.6).	
Measurement and Data	
K.MD.3-Classify and sort objects or people by attributes. Limit objects or people in each category to be less than or equal to 10. **MP.3, MP.6**	<mark>Priority Standard</mark>

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Priority Standards and Instructional Unit 6

Kindergarten Math
Unit: 6

**This unit is designed to around these practice standards: Students use tools and models to interpret, represent and solve word problems. They make sense of addition and subtraction situations by selecting objects to represent the situation (MP.1) and represent the situations using an expression or equations (see clarifications) (MP.4). For example, students act out a story problem involving the eating of apples using cubes to represent each apple (MP.5). Students decomposed numbers into two subgroups in different ways and understand the subgroups do not need to be the same size, but combined they equal to original value (7) (MP.2). Students decompose a group of 7 objects into 3 and 4, 6 and 1, and 5 and 2. They write the related expressions (MP.4) and explain or show (using a balance or moving objects) these different arrangements are equal to each other and equal to 7 (MP.2). Students connect breaking apart 5 into 2 and 3, means 2 + 3 = 5. Beyond counting, students use visuals (dot patterns, five and ten frames) and tools such as counters and Rekenreks to determine sums within 5 and combinations of 10 (MP.5, MP.7). For example, students view a ten frame displaying 7 counters and see 3 more counters are needed to equal 10, or in seeing the sum 3 + 2 may visualize a dot pattern or notice 3 + 2 is 1 more than 2 + 2, a sum they know (MP.2).

**_Priority Standards will be summatively assessed throughout Quarter 4. All supporting standards are to be formatively assessed, driving reteaching and instructional adjustments to meet the needs of all students._

Operations and Algebraic Thinking

K.OA.2-Solve addition and subtraction word problems and add and subtract within 10 by using objects or drawings to represent the problem. **MP.5**	Priority Standard
K.OA.3-Decompose numbers less than or equal to 10.	Priority

a. Decompose numbers into two groups in more than one way by using objects or drawings and record each decomposition by a drawing or equation. **b.** Use objects or drawings to demonstrate equality as the balancing of quantities.	Standard
K.OA.1-Represent addition and subtraction with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations.	Support Standard

Counting and Cardinality

K.CC.1b- Count **b.** Count backwards from 30 by ones.	Priority Standard

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Priority Standards and Instructional Unit 7

Kindergarten Math
Unit: 7

**This unit is designed to around these practice standards: Students recognize the need for consistent, common language to identify coins (MP.6). For example, students understand that "nickel" is the name of a specific coin with a specific appearance and cannot be used to describe other coins of different appearances. Note the standard does not require students to identify values, only names.

****Priority Standards will be summatively assessed throughout Quarter 4. All supporting standards are to be formatively assessed, driving reteaching and instructional adjustments to meet the needs of all students.**

K.MD.4-Recognize and identify coins by name (penny, nickel, dime, quarter).	Priority Standard

**This unit is designed to around these practice standards:Students use tools and models to interpret, represent and solve word problems. They make sense of addition and subtraction situations by selecting objects to represent the situation (MP.1) and represent the situations using an expression or equations (see clarifications) (MP.4). For example, students act out a story problem involving the eating of apples using cubes to represent each apple (MP.5). Students decomposed numbers into two subgroups in different ways and understand the subgroups do not need to be the same size, but combined they equal to original value (7) (MP.2). Students decompose a group of 7 objects into 3 and 4, 6 and 1, and 5 and 2. They write the related expressions (MP.4) and explain or show (using a balance or moving objects) these different arrangements are equal to each other and equal to 7 (MP.2). Students connect breaking apart 5 into 2 and 3, means 2 + 3 = 5. Beyond counting, students use visuals (dot patterns, five and ten frames) and tools such as counters and Rekenreks to determine sums within 5 and combinations of 10 (MP.5, MP.7). For example, students view a ten frame displaying 7 counters and see 3 more counters are needed to equal 10, or in seeing the sum 3 + 2 may visualize a dot pattern or notice 3 + 2 is 1 more than 2 + 2, a sum they know (MP.2).

Operations and Algebraic Thinking	
K.OA.5-Fluently add and subtract within 5. **MP.2, MP.7**	Priority Standard
Measurement and Data	
K.MD.3-Classify and sort objects or people by attributes. Limit objects or people in each category to be less than or equal to 10. **MP.3, MP.6**	Priority Standard
K.CC.2- Count forward beginning from a given number within the known sequence within 100 (instead of having to begin at 1)	Priority Standard

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Priority Standards and Instructional Unit 8

Kindergarten Math
Unit: 8

**This unit is designed to around these practice standards: Students use tools and models to interpret, represent and solve word problems. They make sense of addition and subtraction situations by selecting objects to represent the situation (MP.1) and represent the situations using an expression or equations (see clarifications) (MP.4). For example, students act out a story problem involving the eating of apples using cubes to represent each apple (MP.5). Students decomposed numbers into two subgroups in different ways and understand the subgroups do not need to be the same size, but combined they equal to original value (7) (MP.2). Students decompose a group of 7 objects into 3 and 4, 6 and 1, and 5 and 2. They write the related expressions (MP.4) and explain or show (using a balance or moving objects) these different arrangements are equal to each other and equal to 7 (MP.2). Students connect breaking apart 5 into 2 and 3, means 2 + 3 = 5. Beyond counting, students use visuals (dot patterns, five and ten frames) and tools such as counters and Rekenreks to determine sums within 5 and combinations of 10 (MP.5, MP.7). For example, students view a ten frame displaying 7 counters and see 3 more counters are needed to equal 10, or in seeing the sum 3 + 2 may visualize a dot pattern or notice 3 + 2 is 1 more than 2 + 2, a sum they know (MP.2).

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Operation and Algebraic Thinking

K.OA.1- Represent addition and subtraction with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations. **MP.2, MP.4**	Support Standard

K.OA.2-Solve addition and subtraction word problems and add and subtract within 10 by using objects or drawings to represent the problem. **MP.5**	Priority Standard

K.OA.3-Decompose numbers less than or equal to 10.
  a. Decompose numbers into two groups in more than one way by using objects or drawings and record each decomposition by a drawing or equation.
  b. Use objects or drawings to demonstrate equality as the balancing of quantities.
	Priority Standard

**This unit is designed to around these practice standards: Students explain a teen number can be broken apart into ten ones and some more ones (MP.3). They express this relationship using objects, drawings and corresponding equations (MP.4). For example, a student working with 16 counters places ten counters in a cup and leaves 6 counters on the table and represents this idea using the equation 16=10+6. Note the language of the standard does not require students to actually create the ten unit (that is in grade 1), but they recognize and break apart a teen number into ten ones and some more ones (MP.7).

Number and Operation in Base Ten

K.NBT.1- Compose and decompose numbers from 11 to 19 using quantities (numbers with units) of ten ones and some further ones. Understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. **MP.3, MP.4, MP.7**	Priority Standard

Kindergarten Math

Supporting Standards and Instructional Unit 9

Kindergarten Math
Unit: 9

**This unit is designed to around these practice standards: Students use tools and models to interpret, represent and solve word problems. They make sense of addition and subtraction situations by selecting objects to represent the situation (MP.1) and represent the situations using an expression or equations (see clarifications) (MP.4). For example, students act out a story problem involving the eating of apples using cubes to represent each apple (MP.5). Students decomposed numbers into two subgroups in different ways and understand the subgroups do not need to be the same size, but combined they equal to original value (7) (MP.2). Students decompose a group of 7 objects into 3 and 4, 6 and 1, and 5 and 2. They write the related expressions (MP.4) and explain or show (using a balance or moving objects) these different arrangements are equal to each other and equal to 7 (MP.2). Students connect breaking apart 5 into 2 and 3, means 2 + 3 = 5. Beyond counting, students use visuals (dot patterns, five and ten frames) and tools such as counters and Rekenreks to determine sums within 5 and combinations of 10 (MP.5, MP.7). For example, students view a ten frame displaying 7 counters and see 3 more counters are needed to equal 10, or in seeing the sum 3 + 2 may visualize a dot pattern or notice 3 + 2 is 1 more than 2 + 2, a sum they know (MP.2).

Priority Standards will be summatively assessed throughout Quarter 4. All supporting standards are to be formatively assessed, driving reteaching and instructional adjustments to meet the needs of all students.

Operation and Algebraic Thinking

K.OA.3-Decompose numbers less than or equal to 10. a. Decompose numbers into two groups in more than one way by using objects or drawings and record each decomposition by a drawing or equation.	Priority Standard

b. Use objects or drawings to demonstrate equality as the balancing of quantities. **MP.2, MP.4**	
K.OA.4-For any number from 1 to 9, find the number that makes 10 when added to the given number by using objects or drawings and record the answer with a drawing or equation. **MP.7, MP.8**	Support Standard
Measurement and Data	
K.MD.4-Recognize and identify coins by name (penny, nickel, dime, quarter). **MP.6**	Priority Standard

Kindergarten Math

Supporting Standards and Instructional Unit 10

Kindergarten Math
Unit: 10

**This unit is designed to around these practice standards: Students use informal language as they compare objects; for example, sorting polygons by their relative size, or by a rule, such as "have three corners" (MP.6). Students analyze attributes of three-dimensional shapes; for example, noticing some have sides that all look like squares or rectangles, while others have sides that look like triangles (MP.3). Using a variety of tools, students construct objects that resemble items in their world (MP.5). As they construct and draw shapes, they recognize they are putting together shapes to form new larger shapes, just as they combine objects to have more objects (MP.5). Students analyze and describe shapes they form by combining shapes; for example, using pattern blocks or tangrams to build a design (MP.3).	

**Priority Standards will be summatively assessed throughout Quarter 4. All supporting standards are to be formatively assessed, driving reteaching and instructional adjustments to meet the needs of all students.	

Geometry	
K.G.4-Describe the similarities, differences and attributes of two and three dimensional shapes using different sizes and orientations. **MP.3, MP.7**	Priority Standard
K.G.5-Model shapes in the world by building figures from components and drawing shapes. **MP.1, MP.5**	Support Standard
K.G.6-Compose simple shapes to form larger shapes.	Support Standard

MP.3, MP.5	
Number and Operations in Base Ten	
K.NBT.1-Compose and decompose numbers from 11 to 19 using quantities (numbers with units) of ten ones and some further ones. Understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. **MP.3, MP.4, MP.7**	Priority Standard