Kindergarten Mathematics
Units of Instruction
2022-2023

BOONE COUNTY SCHOOLS

ACHIEVING EXCELLENCE TOGETHER

Kindergarten Mathematics

Unit 1: Numbers all around us (up to 5) 20 Days	Unit 2: Numbers all around us (sets up to 10) 25 Days	Unit 3: Counting and Naming shapes 15 Days	Unit 4: Comparing numbers and lengths 15 Days	Unit 5: Adding and Subtracting: within 10 (formally) 30 Days	UNIT 6: Adding and Subtracting: Ten and some more 30 Days	Unit 7: Numbers within 100 30 Days	Unit 8: Modeling with 2D and 3D shapes 15 Days
K.CC.1.a K.CC.4 K.CC.5b K.OA.5 K.MD.3 K.CC.3	K.CC.1.a K.CC.4 K.CC.5 b K.OA.3 K.OA.4 K.OA.5 K.MD.4 K.CC.3	K.G.1 K.CC.4 K.OA.5 K.MD.3 K.G.2 K.G.4	K.CC.3 K.MD.1 K.OA.5 K.CC.2 K.CC.6 K.CC.7 K.MD.2	K.CC.3 K.OA.1 K.OA.2 K.OA.3 K.OA.5 K.CC.2 K.OA.4	K.CC.1a K.CC.3 K.CC.5a K.NBT.1 K.OA.5	K.CC.1 K.OA.1 K.NBT.1 K.OA.2 K.CC.2	K.G.1 K.G.3 K.G.5 K.G.6

*Fluency Standards (taught all year long): K.OA.5

Priority: K.CC.1, K.CC.3, K.CC.4, K.CC.5, K.G.1, K.OA.1, K.OA.2, K.OA.3, K.OA.5, K.MD.1, K.NBT.1

Kindergarten Mathematics

BOONE COUNTY SCHOOLS

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Unit 1: Numbers all around us
20 Days

Kindergarten Mathematics
Unit 1: Numbers all around us (up to 5)

This unit focuses on the numbers 1-5 as children see them in their own world. Emphasis should be on counting objects and recognizing numerals in their world. This unit is also a chance for teachers to develop a mathematical community within their classroom, asking students to collaborate and wonder about "How many?" in many different contexts. For this unit, the standards below should be addressed only within 5; the standards will repeat in subsequent units.

Duration: 20 Days

Standards for Mathematical Practice	
MP.1. Make sense of problems and persevere in solving them. MP.2. Reason abstractly and quantitatively. MP.3. Construct viable arguments and critique the reasoning of others. MP.4. Model with mathematics.	MP.5. Use appropriate tools strategically. MP.6. Attend to precision. MP.7. Look for and make use of structure. MP.8. Look for and express regularity in repeated reasoning.

Priority Standards	
Standards	**Clarifications**
Cluster: Know number names and the count sequence. **KY.K.CC.1 Count** **a. Count to 100 by ones and by tens.** MP.7, MP.8	Students verbally count forward by ones (1,2,3,4. . .) to 100 Students verbally count forward by tens (10, 20, 30. . .) to 100. Students verbally count backwards by ones (30, 29, 28, 27. . .) from 30. **Coherence KY.K.CC.1→KY.1.NBT.1**
Cluster: Count to tell the number of objects. **KY.K.CC.4 Understand the relationship between**	Students understand each object being counted is given only one number name and this naming occurs in the correct sequence (one, two, three, four. . .). Once students concluded counting a group of objects in different

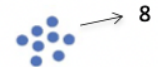|	
numbers and quantities; connect counting to cardinality. **a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.** **b. Understand that the last number name said tells the number 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.** MP.2, MP.8	arrangements, the student correctly identifies the amount of objects in that group (rather than recounting the group). Students verbally count by ones, connecting each number word with a quantity (or collection) as the count progresses. **Coherence KY.K.CC.4→KY.1.OA.5**
Cluster: Count to tell the number of objects. **KY.K.CC.5 Given a number from 1-20, count out that many objects.** **b. Count to answer "how many?" questions with as many as 10 things in a scattered configuration.** MP.2, MP.3	When presented with a numeral (in the range of 1-20), the student creates a collection of a like amount. When presented with a collection (in the range of 1-20) the student connects that collection to the correct numeral. When presented with collections in structured arrangements (line, circle, array and others) the student determines the quantity of that collection by counting. When presented with collections in an unstructured arrangement the student determines the quantity of that collection by counting. **Coherence KY.K.CC.5→KY.1.NBT.1**

Supporting Standards	
Standards	**Clarifications**

Cluster: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. **KY.K.OA.5 Fluently add and subtract within 5.** MP.2, MP.7	Students solve addition and subtraction tasks (with sums and differences within 5) efficiently, accurately, flexibly and appropriately. Being fluent means students choose flexibly among methods and strategies to solve contextual and mathematical problems, they understand and explain their approaches and they produce accurate answers efficiently. Students express mathematical reasoning regarding their responses ("5-3 equals 2 because when you move three back, you land on two"). Note: Reaching fluency is an ongoing process that will take much of the Year. **Coherence KY.K.OA.5→KY.1.OA.6**
Cluster: Classify objects and count the number of objects in each category. **KY.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	For a group of 10 (or less) objects/people, students compare and order objects according to a common measurable attribute (height, weight, length, width, depth) shared by the objects (arranging 4 blocks from heaviest to lightest; arranging classmates from tallest to shortest). **Coherence KY.K.MD.3→KY.1.MD.4**
Cluster: Know number names and the count sequence. **KY.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).** MP.2, MP.7, MP.8	Students write all numerals in the range of 0-20 (1, 2, 3, 4, 5...) When students are given a written numeral, represent with objects within 20 (4...***). **Coherence KY.K.CC.3→KY.1.NBT.1**

Kindergarten Mathematics

BOONE COUNTY SCHOOLS

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Unit 2: Number all around us (sets within 10)

Kindergarten Mathematics
Unit 2: Numbers all around us (Sets within 10)

This unit focuses on the numbers 1-10 as children see them in their own world. Emphasis should be on counting objects and recognizing numerals in their world. This unit is also a time for students to begin to describe the relationships between numbers - for example, which numbers make ten altogether. One specific context for this unit will be identifying and naming coins. Students should name coins and use their counting to answer questions like, "How many dimes are there?" For this unit, the standards below should be addressed only within 10; some of the standards will repeat in subsequent units.

Duration: 25

Standards for Mathematical Practice	
MP.1. Make sense of problems and persevere in solving them. MP.2. Reason abstractly and quantitatively. MP.3. Construct viable arguments and critique the reasoning of others. MP.4. Model with mathematics.	MP.5. Use appropriate tools strategically. MP.6. Attend to precision. MP.7. Look for and make use of structure. MP.8. Look for and express regularity in repeated reasoning.
Priority Standards	
Standards	**Clarifications**
Cluster: Know number names and the count sequence. **KY.K.CC.1 Count** **a. Count to 100 by ones and by tens.** MP.7, MP.8	Students verbally count forward by ones (1,2,3,4. . .) to 100 Students verbally count forward by tens (10, 20, 30. . .) to 100. Students verbally count backwards by ones (30, 29, 28, 27. . .) from 30. **Coherence KY.K.CC.1→KY.1.NBT.1**

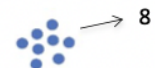|	
Cluster: Count to tell the number of objects. **KY.K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality.** **a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name 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.** MP.2, MP.8	Students understand each object being counted is given only one number name and this naming occurs in the correct sequence (one, two, three, four. . .). Once students concluded counting a group of objects in different arrangements, the student correctly identifies the amount of objects in that group (rather than recounting the group). Students verbally count by ones, connecting each number word with a quantity (or collection) as the count progresses. **Coherence KY.K.CC.4→KY.1.OA.5**
Cluster: Count to tell the number of objects. **KY.K.CC.5 Given a number from 1-20, count out that many objects.** **b. Count to answer "how many?" questions with as many as 10 things in a scattered configuration.** MP.2, MP.3	When presented with a numeral (in the range of 1-20), the student creates a collection of a like amount. When presented with a collection (in the range of 1-20) the student connects that collection to the correct numeral. When presented with collections in structured arrangements (line, circle, array and others) the student determines the quantity of that collection by counting. When presented with collections in an unstructured arrangement the student determines the quantity of that collection by counting. **Coherence KY.K.CC.5→KY.1.NBT.1**

Cluster: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	When presented with a numeral or collection (10 or less), the student separates that amount into two groups or collections via drawings or objects.
KY.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.**	Note: Drawings need not show detail, but accurately represent the quantities involved in the task. Students represent an equation as the balance of quantities. Note: Drawings need not show detail, but accurately represent the quantities involved in the task.
MP.2, MP.4	 **Coherence KY.K.OA.5→KY.1.OA.6**

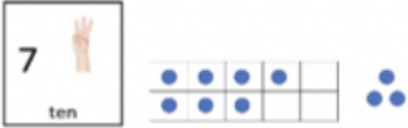| *Supporting Standards*	
Standards	**Clarifications**
Cluster: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. **KY.K.OA.4 For any number from 1 to 9, find the number that makes 10 when added to the given number by using objects or drawings and record the answer with a drawing or equation.**	When presented with a numeral or collection of objects between 1-9, represent the corresponding number that makes 10 with objects or drawings. Students record these combinations using either drawings or numbers. Drawings need not show detail, but accurately represent the quantities involved in the task**.**

MP.7, MP.8	**Coherence KY.K.OA.4→KY.1.OA.6**
Cluster: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. **KY.K.OA.5 Fluently add and subtract within 5.** MP.2, MP.7	Students solve addition and subtraction tasks (with sums and differences within 5) efficiently, accurately, flexibly and appropriately. Being fluent means students choose flexibly among methods and strategies to solve contextual and mathematical problems, they understand and explain their approaches and they produce accurate answers efficiently. Students express mathematical reasoning regarding their responses ("5-3 equals 2 because when you move three back, you land on two"). Note: Reaching fluency is an ongoing process that will take much of the Year. **Coherence KY.K.OA.5→KY.1.OA.6**
Cluster: Identify coins by name. **KY.K.MD.4 Recognize and identify coins by name (penny, nickel, dime, quarter).** MP.6	Students identify coins (penny, nickel, dime, quarter) when presented. When shown a nickel, name the coin as a nickel; select a nickel when presented with a group of different coins. Note: Students need not identify the value of these coins. **Coherence KY.K.MD.4→KY.1.MD.3b**
Cluster: Know number names and the count sequence.	Students write all numerals in the range of 0-20 (1, 2, 3, 4, 5...) When students are given a written numeral,

| **KY.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).

MP.2, MP.7, MP.8 | represent with objects within 20 (4...***).

Coherence KY.K.CC.3→KY.1.NBT.1 |

Kindergarten Mathematics

BOONE COUNTY SCHOOLS

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Unit 3: Counting and Naming Shapes

Kindergarten Mathematics
Unit 3: Counting and Naming Shapes

This unit focuses on students sorting and naming shapes by attribute. This unit focuses only on the 2D shapes. The students will also be working towards fluency in counting and cardinality skills from previous units by counting how many sides to a shape and how many shapes in each set.

Duration: 15 Days

Standards for Mathematical Practice	
MP.1. Make sense of problems and persevere in solving them. MP.2. Reason abstractly and quantitatively. MP.3. Construct viable arguments and critique the reasoning of others. MP.4. Model with mathematics.	MP.5. Use appropriate tools strategically. MP.6. Attend to precision. MP.7. Look for and make use of structure. MP.8. Look for and express regularity in repeated reasoning.
Priority Standards	
Standards	**Clarifications**
Cluster: Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders and spheres). **KY.K.G.1 Name and describe shapes in the environment.** **a. Describe objects in the environment using names of shapes. b. Describe the relative positions of these objects using terms above, below, in front of, behind and next to.**	For objects in student's environment, the student accurately provides a shape name (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders and spheres). ("The clock on the wall is a circle." "The desktop is a rectangle.") Students use positional language to describe the relationships between objects ("The clock is above the bulletin board." "My desk is next to the computer table.")

MP.6	**Coherence KY.K.G.1 →KY.K.G.4**
Cluster: Count to tell the number of objects. **KY.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.** MP.2, MP.8	Students understand each object being counted is given only one number name and this naming occurs in the correct sequence (one, two, three, four. . .). Once students concluded counting a group of objects in different arrangements, the student correctly identifies the amount of objects in that group (rather than recounting the group). Students verbally count by ones, connecting each number word with a quantity (or collection) as the count progresses. **Coherence KY.K.CC.4→KY.1.OA.5**

Supporting Standards

Standards	Clarifications
Cluster: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. **KY.K.OA.5 Fluently add and subtract within 5.** MP.2, MP.7	Students solve addition and subtraction tasks (with sums and differences within 5) efficiently, accurately, flexibly and appropriately. Being fluent means students choose flexibly among methods and strategies to solve contextual and mathematical problems, they understand and explain their approaches and they produce accurate answers efficiently. Students express mathematical reasoning regarding their responses

	("5-3 equals 2 because when you move three back, you land on two"). Note: Reaching fluency is an ongoing process that will take much of the Year. **Coherence KY.K.OA.5→KY.1.OA.6**
Cluster: Classify objects and count the number of objects in each category. **KY.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	For a group of 10 (or less) objects/people, students compare and order objects according to a common measurable attribute (height, weight, length, width, depth) shared by the objects (arranging 4 blocks from heaviest to lightest; arranging classmates from tallest to shortest). **Coherence KY.K.MD.3→KY.1.MD.4**
Cluster: Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders and spheres). **KY.K.G.2 Correctly name shapes regardless of orientations or overall size.** MP.7	Students identify and name shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders and spheres) regardless of size, orientation, or positioning. (The classroom window is a rectangle and this paper is a rectangle, too.) **Coherence KY.K.G.2→KY.K.G.4**
Cluster: Analyze, compare, create and compose shapes. **KY.K.G.4 Describe the similarities, differences and attributes of two and three dimensional shapes using different sizes and orientations.**	When considering two-dimensional shapes (square, circle, triangle, rectangle, hexagon) or objects and three dimensional shapes (cube, cone, cylinder, sphere) or objects, students describe similarities, differences and attributes. ("The window and paper are both rectangles, but the window sits sideways and my paper is long ways." "My book and my paper both look like rectangles, but my book is three-dimensional because it is thicker.")

| MP.3, MP.7 | **Coherence KY.K.G.4→KY.1.G.1** |

Kindergarten Mathematics

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Unit 4: Comparing Numbers and Lengths

Kindergarten Mathematics
Unit 4: Comparing numbers and lengths

This unit builds on previous units where students have been thinking about the relationships between numbers within 10. In this unit, students will compare lengths, a concrete context of comparison. They will then consider comparison through representations and ultimately through abstract comparison of numerals, connecting their learning back to counting and cardinality. This unit will focus on more and less, but will also provide a foundation for formalizing addition in the next units.

Duration: 15 days

Standards for Mathematical Practice	
MP.1. Make sense of problems and persevere in solving them. MP.2. Reason abstractly and quantitatively. MP.3. Construct viable arguments and critique the reasoning of others. MP.4. Model with mathematics.	MP.5. Use appropriate tools strategically. MP.6. Attend to precision. MP.7. Look for and make use of structure. MP.8. Look for and express regularity in repeated reasoning.
Priority Standards	
Standards	**Clarifications**
Cluster: Know number names and the count sequence. **KY.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).**	Students write all numerals in the range of 0-20 (1, 2, 3, 4, 5...) When students are given a written numeral, represent with objects within 20 (4...). **Coherence KY.K.CC.3→KY.1.NBT.1**

Standards	Clarifications
MP.2, MP.7, MP.8	
Cluster: Describe and compare measurable attributes. **KY.K.MD.1 Describe measurable attributes (length, height, weight, width, depth) of an object or a set of objects using appropriate vocabulary.** MP.3, MP.6	For a single object, students verbally identify more than one attribute measured (wooden block - height, weight). **Coherence KY.K.MD.1→KY.1.MD.2**

Supporting Standards	
Standards	**Clarifications**
Cluster: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. **KY.K.OA.5 Fluently add and subtract within 5.** MP.2, MP.7	Students solve addition and subtraction tasks (with sums and differences within 5) efficiently, accurately, flexibly and appropriately. Being fluent means students choose flexibly among methods and strategies to solve contextual and mathematical problems, they understand and explain their approaches and they produce accurate answers efficiently. Students express mathematical reasoning regarding their responses ("5-3 equals 2 because when you move three back, you land on two"). Note: Reaching fluency is an ongoing process that will take much of the Year. **Coherence KY.K.OA.5→KY.1.OA.6**
Cluster: Know number names and the count sequence.	Students verbally count forward starting at a number other than one (58,

KY.K.CC.2 Count forward beginning from a given number within the known sequence within 100 (instead of having to begin at 1). MP.7	59, 60, 61, 62. . .) within 100. **Coherence KY.K.CC.2→KY.1.NBT.1**
Cluster: Compare numbers. **KY.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.** MP.1, MP.3, MP.6	Compare two collections (each containing up to 10 objects) to determine whether one collection is greater than, less than, or equal to the other. Students use matching strategies (pairing items from the collections) or counting strategies (counting one collection and then the other). Note: Students do not need to use the relation symbols greater than (>), less than (<) and equal to (=) to compare groups of objects. **Coherence KY.K.CC.6→KY.K.MD.3**
Cluster: Compare numbers. **KY.K.CC.7 Compare two numbers between 1 and 10 presented as written numerals.** MP.2	When presented with two numerals (between 1 and 10), students determine which numeral is greater than, less than, or equal to the other. Students express some mathematical reasoning regarding their determination (5 is larger than 3 because it has two more). Note: Students do not need to use the relation symbols greater than (>), less than (<) and equal to (=) to compare numbers between 1 and 10. **Coherence KY.K.CC.7→KY.1.NBT.3**
Cluster: Describe and compare measurable attributes. **KY.K.MD.2 Directly compare two objects with a**	Students consider and compare a common measurable attribute shared by two objects (Which cup is taller and which is shorter? Which bucket of sand is heavier and which is lighter?).

measurable attribute in common, to see which object has "more of"/ "less of" the attribute and describe the difference. MP.2, MP.6	**Coherence KY.K.MD.1→KY.1.MD.1**

Kindergarten Mathematics

Unit 5: Adding and Subtracting within 10

Kindergarten Mathematics
Unit 5: Adding and Subtracting within 10

This unit builds on the number relationships that students have been studying so far. The students will use concrete, representational, and numerical representations of addition and subtraction situations to solve mathematical and real life problems. The students will use direct modeling, counting, and foundational additional and subtraction strategies in situations involving put together/take apart, Add To, and Take From scenarios (See Table 6 of the Ky Academic Standards). Adding and subtracting in this unit is limited to within 10, focusing on building fluency within 5.

Duration: 30 Days

Standards for Mathematical Practice	
MP.1. Make sense of problems and persevere in solving them. MP.2. Reason abstractly and quantitatively. MP.3. Construct viable arguments and critique the reasoning of others. MP.4. Model with mathematics.	MP.5. Use appropriate tools strategically. MP.6. Attend to precision. MP.7. Look for and make use of structure. MP.8. Look for and express regularity in repeated reasoning.
Priority Standards	
Standards	**Clarifications**
Cluster: Know number names and the count sequence. **KY.K.CC.3 Represent numbers.** **a. Write numbers from 0 to 20.** **b. Represent a number of objects with a written**	Students write all numerals in the range of 0-20 (1, 2, 3, 4, 5...) When students are given a written numeral, represent with objects within 20 (4...). **Coherence KY.K.CC.3→KY.1.NBT.1**

numeral 0-20 (with 0 representing a count of no objects). MP.2, MP.7, MP.8	
Cluster: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. **KY.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	Students flexibly model or represent addition and subtraction tasks across a range of contexts rather than just becoming proficient with a single model or representation. See Table 1 in Appendix A. Note: Drawings need not show detail but should accurately represent the quantities involved in the task. **Coherence KY.K.OA.1→KY.K.OA.2**
Cluster: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. **KY.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	Students flexibly model or represent addition and subtraction situations or context problems (involving sums and differences up to 10). See Table 1 in Appendix A. Note: Drawings need not show detail but accurately represent the quantities involved in the task. **Coherence KY.K.OA.2→KY.1.OA.1**
Cluster: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	

KY.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.** MP.2, MP.4	When presented with a numeral or collection (10 or less), the student separates that amount into two groups or collections via drawings or objects. Note: Drawings need not show detail, but accurately represent the quantities involved in the task. Students represent an equation as the balance of quantities. Note: Drawings need not show detail, but accurately represent the quantities involved in the task. **Coherence KY.K.OA.5→KY.1.OA.6**
Cluster: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. **KY.K.OA.5 Fluently add and subtract within 5.** MP.2, MP.7	Students solve addition and subtraction tasks (with sums and differences within 5) efficiently, accurately, flexibly and appropriately. Being fluent means students choose flexibly among methods and strategies to solve contextual and mathematical problems, they understand and explain their approaches and they produce accurate answers efficiently. Students express mathematical reasoning regarding their responses ("5-3 equals 2 because when you move three back, you land on two"). Note: Reaching fluency is an ongoing process that will take much of the Year.

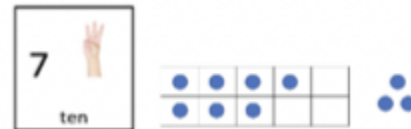|	Coherence KY.K.OA.5→KY.1.OA.6
Supporting Standards	
Standards	**Clarifications**
Cluster: Know number names and the count sequence. **KY.K.CC.2 Count forward beginning from a given number within the known sequence within 100 (instead of having to begin at 1).** MP.7	Students verbally count forward starting at a number other than one (58, 59, 60, 61, 62. . .) within 100. **Coherence KY.K.CC.2→KY.1.NBT.1**
Cluster: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. **KY.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	When presented with a numeral or collection of objects between 1-9, represent the corresponding number that makes 10 with objects or drawings. Students record these combinations using either drawings or numbers. Drawings need not show detail, but accurately represent the quantities involved in the task**.** **Coherence KY.K.OA.4→KY.1.OA.6**

Kindergarten Mathematics

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Unit 6: Adding and Subtracting with Ten and Some More

Kindergarten Mathematics
Unit 6: Adding and Subtracting with Ten and Some More

This unit builds students' understanding of the number system by using addition to compose the teen numbers (ten plus some more). Students have been working on counting the number sequence since the beginning of the year, but will in this unit consider the meaning of ten and some more. They will make sense of teen numbers by composing sets of ten and some more with concrete models, representational pictures and words, and numerical representations. This unit provides a foundation of understanding the role of 10 in the number system, which students will explore further in the next unit as they study numbers within 100.

Duration: 30 Days

Standards for Mathematical Practice	
MP.1. Make sense of problems and persevere in solving them. MP.2. Reason abstractly and quantitatively. MP.3. Construct viable arguments and critique the reasoning of others. MP.4. Model with mathematics.	MP.5. Use appropriate tools strategically. MP.6. Attend to precision. MP.7. Look for and make use of structure. MP.8. Look for and express regularity in repeated reasoning.
Priority Standards	
Standards	**Clarifications**
Cluster: Know number names and the count sequence. **KY.K.CC.1 Count** **a. Count to 100 by ones and by tens.** MP.7, MP.8	Students verbally count forward by ones (1,2,3,4. . .) to 100 Students verbally count forward by tens (10, 20, 30. . .) to 100. Students verbally count backwards by ones (30, 29, 28, 27. . .) from 30. **Coherence KY.K.CC.1→KY.1.NBT.1**

Cluster: Know number names and the count sequence. **KY.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).** MP.2, MP.7, MP.8	Students write all numerals in the range of 0-20 (1, 2, 3, 4, 5...) When students are given a written numeral, represent with objects within 20 (4...). **Coherence KY.K.CC.3→KY.1.NBT.1**
Cluster: Count to tell the number of objects. **KY.K.CC.5 Given a number from 1-20, count out that many objects.** A. Count to answer "how many?" questions with as many as 20 things arranged in a line, a rectangular array, or a circle. MP.2, MP.3	When presented with a numeral (in the range of 1-20), the student creates a collection of a like amount. When presented with a collection (in the range of 1-20) the student connects that collection to the correct numeral. When presented with collections in structured arrangements (line, circle, array and others) the student determines the quantity of that collection by counting. → 9 → 4 When presented with collections in an unstructured arrangement the student determines the quantity of that collection by counting. → 8 **Coherence KY.K.CC.5→KY.1.NBT.1**
Cluster: Working with numbers 11-19 to gain foundations for place value. **KY.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,**	Using numbers or representations, students use 10 units as an anchor to compose and decompose quantities (up to 19). Note: Drawings need not show detail, but accurately represent the quantities involved in the task. 16 triangles = 10 triangles + △△△△△△; 18 beans = 10 beans + 8 beans

eight, or nine ones. MP.3, MP.4, MP.7	**Coherence KY.K.NBT.1→KY.1.NBT.2**

Supporting Standards	
Standards	**Clarifications**
Cluster: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. **KY.K.OA.5 Fluently add and subtract within 5.** MP.2, MP.7	Students solve addition and subtraction tasks (with sums and differences within 5) efficiently, accurately, flexibly and appropriately. Being fluent means students choose flexibly among methods and strategies to solve contextual and mathematical problems, they understand and explain their approaches and they produce accurate answers efficiently. Students express mathematical reasoning regarding their responses ("5-3 equals 2 because when you move three back, you land on two"). Note: Reaching fluency is an ongoing process that will take much of the Year. **Coherence KY.K.OA.5→KY.1.OA.6**

Kindergarten Mathematics

BOONE COUNTY SCHOOLS

ACHIEVING EXCELLENCE TOGETHER

Unit 7: Numbers within 100

Kindergarten Mathematics
Unit 7: Numbers within 100

This unit focuses students' sense making on the number system within 100. In addition to learning the new words (the decade names for example), students will look for structure and patterns to develop an understanding of Base Ten systems. They will use concrete, representational, and abstract forms of number to describe relationships between values.

Duration: 30 Days

Standards for Mathematical Practice	
MP.1. Make sense of problems and persevere in solving them. MP.2. Reason abstractly and quantitatively. MP.3. Construct viable arguments and critique the reasoning of others. MP.4. Model with mathematics.	MP.5. Use appropriate tools strategically. MP.6. Attend to precision. MP.7. Look for and make use of structure. MP.8. Look for and express regularity in repeated reasoning.
Priority Standards	
Standards	**Clarifications**
Cluster: Know number names and the count sequence. **KY.K.CC.1 Count** **a. Count to 100 by ones and by tens.** **b. Count backwards from 30 by ones.** MP.7, MP.8	Students verbally count forward by ones (1,2,3,4. . .) to 100 Students verbally count forward by tens (10, 20, 30. . .) to 100. Students verbally count backwards by ones (30, 29, 28, 27. . .) from 30. **Coherence KY.K.CC.1→KY.1.NBT.1**

Standards	Clarifications
Cluster: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. **KY.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	Students flexibly model or represent addition and subtraction tasks across a range of contexts rather than just becoming proficient with a single model or representation. See Table 1 in Appendix A. Note: Drawings need not show detail but should accurately represent the quantities involved in the task. **Coherence KY.K.OA.1→KY.K.OA.2**
Cluster: Working with numbers 11-19 to gain foundations for place value. **KY.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	Using numbers or representations, students use 10 units as an anchor to compose and decompose quantities (up to 19). Note: Drawings need not show detail, but accurately represent the quantities involved in the task. 16 triangles = 10 triangles + △△△△△△; 18 beans = 10 beans + 8 beans **Coherence KY.K.NBT.1→KY.1.NBT.2**

Supporting Standards

Standards	Clarifications
Cluster: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. **KY.K.OA.2 Solve addition and subtraction word**	Students flexibly model or represent addition and subtraction situations or context problems (involving sums and differences up to 10). See Table 1 in Appendix A. Note: Drawings need not show detail but accurately represent the quantities involved in the task.

problems and add and subtract within 10 by using objects or drawings to represent the problem. MP.5	**Coherence KY.K.OA.2→KY.1.OA.1**
Cluster: Know number names and the count sequence. **KY.K.CC.2 Count forward beginning from a given number within the known sequence within 100 (instead of having to begin at 1).** MP.7	Students verbally count forward starting at a number other than one (58, 59, 60, 61, 62. . .) within 100. **Coherence KY.K.CC.2→KY.1.NBT.1**

Kindergarten Mathematics

Boone County Schools
ACHIEVING EXCELLENCE TOGETHER

Unit 8: Modeling with 2D and 3D Shapes

Kindergarten Mathematics
Unit 8: Modeling with 2D and 3D Shapes

Just as students began the year by describing their world with numbers, this unit wraps up the year by exploring how we use shapes and solids to build and describe our world. Students build on the modeling skills they have been developing all year to consider why naming and classifying shapes by attributes helps us understand.

Duration: 15 Days

Standards for Mathematical Practice	
MP.1. Make sense of problems and persevere in solving them. MP.2. Reason abstractly and quantitatively. MP.3. Construct viable arguments and critique the reasoning of others. MP.4. Model with mathematics.	MP.5. Use appropriate tools strategically. MP.6. Attend to precision. MP.7. Look for and make use of structure. MP.8. Look for and express regularity in repeated reasoning.
Priority Standards	
Standards	**Clarifications**
Cluster: Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders and spheres). **KY.K.G.1 Name and describe shapes in the environment.** **a. Describe objects in the environment using names of shapes. b. Describe the relative positions of these objects using terms above, below, in front of, behind and next to.**	For objects in student's environment, the student accurately provides a shape name (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders and spheres). ("The clock on the wall is a circle." "The desktop is a rectangle.") Students use positional language to describe the relationships between objects ("The clock is above the bulletin board." "My desk is next to the computer table.")

MP.6	Coherence KY.K.G.1 →KY.K.G.4

Supporting Standards	
Standards	**Clarifications**
Cluster: Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders and spheres). **KY.K.G.3 Identify shapes as two-dimensional or three-dimensional.** MP.3, MP.6	When presented with a shape or object, students determine whether it is two-dimensional (square, circle, triangle, rectangle, or hexagon) or three- dimensional (cube, cone, cylinder, sphere). Students express mathematical reasoning regarding their responses. (The block is three-dimensional because it's thick and not flat like paper.) **Coherence KY.K.G.3→KY.1.G.1**
Cluster: Analyze, compare, create and compose shapes. **KY.K.G.5 Model shapes in the world by building figures from components and drawing shapes.** MP.1, MP.5	Students construct and draw models of shapes (square, circle, triangle, rectangle, hexagon, cube, cone, cylinder, sphere) in the world around them. Students create shapes with materials that include but are not limited to straws, pipe cleaners, popsicle sticks or clay and describe the shape they create. (Students use sticks and a ball to replicate an ice cream cone.) **Coherence KY.K.G.5→KY.1.G.1**
Cluster: Analyze, compare, create and compose shapes. **KY.K.G.6 Compose simple shapes to form larger shapes.**	Students explore by using simple shapes to construct a larger shape. (Students arrange paper triangles to form a rectangle. Students arrange triangle pattern blocks to form a hexagon.)

| MP.3, MP.5 | **Coherence KY.K.G.6→KY.1.G.2** |