First Grade Math
Units of Instruction
2020-2021

BOONE COUNTY SCHOOLS

ACHIEVING EXCELLENCE TOGETHER

Grade 1 Math

Boone County Schools — Achieving Excellence Together

Priority Standards and Instructional Unit 1

1st Grade Math
Unit: 1

**This unit is designed around these practice standards: Through analyzing many shapes and making sense of what they have in common, students determine what attributes define a shape versus attributes that do not define a shape (MP.7). For example, students describe the defining characteristics of a triangle such as straight sides, three sides, three angles or three points and describe non-defining characteristics such as blue, big or heavy (MP.3, MP.7). Students use knowledge of defining attributes to build and/or draw examples and non-examples of these shapes, attending to those attributes which define the shape (MP.6). Students may compare their drawings and discover a square is a square regardless of its color, size or orientation (MP.7).

**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

1.G.1-Distinguish between defining attributes versus non-defining attributes; build and draw shapes to possess defining attributes. **MP.7**	Priority Standard

1.G.2-Compose shapes:
     a. Compose two-dimensional shapes to create rectangles, squares, trapezoids, triangles, half-circles and quarter-circles composite shape and compose new shapes from the composite shapes.
     b. Use three-dimensional shapes (cubes, right rectangular prisms,
	Supporting Standard

right circular cones and right circular cylinders) to create a composite shape and compose new shapes from the composite shapes.	
1.G.3-Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths and quarters, and use the phrases half of, fourth of and quarter of. Describe the whole as two of or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.	Supporting Standard

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Priority Standards and Instructional Unit 2

1st Grade Math
Unit: 2

**This unit is designed around these practice standards: Students recognize repeated sequences emerge as they cross into decade families and use those patterns to start a count from anywhere between 0 and 120 (MP.8). For example, counting within the 20s decade family involves repeated counting by ones in the range of 0-9 (20, 21, 22, 23…) and this pattern holds even as they go over 100 (100, 101, 102, 103…) (MP.8). In creating a representation of a number, students select a tool or picture that can be grouped to show tens and ones (MP.5). For example, students bundle sticks into 2 bundles of 10 and 3 remaining sticks, connect this to the numeral "23."

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Number and Operations in Base Ten

1.NBT.1- Count and represent numbers.
    a. Count forward to and backward from 120, starting at any number less than 120.
    b. In this range, read and write numerals and represent a number of objects with a written numeral.
MP.2, MP.5, MP.8
	Priority Standard

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Priority Standards and Instructional Unit 3

1st Grade Math
Unit: 3

**This unit is designed around these practice standards: Students understand the individual digits in a two-digit numeral each represent units of ten and one respectively. Students use tools to represent numbers, selecting tools such as popsicle sticks, linking cubes and straws that can physically be grouped in tens (MP.5). In representing numbers with concrete tools, students see one ten unit (a bundle) can be thought of as "10, two as twenty and so forth (MP.7). When comparing two two-digit numbers, students interpret the inherent value of each digit (22 is two tens with two remaining ones) and determine which number is larger (MP.2). For example, students realize that 32 is greater than 23 because of the value of its digits.

**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.

Number and Operation in Base 10

1.NBT.2-Understand the two-digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
   a. 10 can be thought of as a bundle of ten ones — called a "ten."
   b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight or nine ones.
   c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight or nine tens (and 0 ones). MP.5, MP.7
	Priority Standard

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Priority Standards and Instructional Unit 4

1st Grade Math
Unit: 4

**This unit is designed around these practice standards: Students compare and order objects by analyzing their lengths. For example, they wonder which desk is taller and use their leg or a piece of string to compare each desk and determine its relative height (MP.2). Students describe the objects' length in relation to one another using precise language, understanding "bigger" and "smaller" are not as specific as "longer" and "shorter" for describing the attribute of length (MP.6). Students understand they use an object as a unit of measure. For example, a paperclip can be used to see how long a pencil is (MP.5). Students use a pencil to measure the length of a book and a desk. If it takes two pencils for the length of the book and four pencils for the length of the desk, students can determine the desk is longer than the book (MP.2).

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Measurement and Data

1.MD.1- Order three objects by length; compare the lengths of two objects indirectly by using a third object. **MP.6**	Supporting Standard
1.MD.2-Express the length of an object as a whole number of same size length units, by laying multiple copies of a shorter object (the length unit) end to end with no gaps or overlaps. **MP.2, MP.5**	Priority Standard

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Priority Standards and Instructional Unit 5

1st Grade Math
Unit: 5

**This unit is designed around these practice standards: Students use tools to show sums and differences (MP.5). Students notice when they count two groups and count the total number of items, the total count is the sum (MP.8). Students employ counting strategies (forward and/or back) as strategies for adding and subtracting (MP.2). As students count on, they count on from the larger addend (solving 9 + 3 instead of 3 + 9) recognizing this is more efficient and addition is commutative (MP.7). Students recognize sums such as 8 + 9 are not efficiently solved by counting on and number relationships can be used to determine the sum. With repeated experiences, students notice relationships such as 9 + 8 = 10 + 7 (MP.8).

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Operations and Algebraic Thinking

1.OA.6-Add and subtract within 20.
   a. Fluently add and subtract within 10.
      MP.2, MP.7, MP.8
	Priority Standard

1.OA.5- Relate counting to addition and subtraction. **MP.5, MP.8**	Supporting Standard

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Priority Standards and Instructional Unit 6

1st Grade Math
Unit: 6

**This unit is designed around these practice standards: Students understand an equation such as 8 + 3 = 11, the numerals "8" and 3" represent two quantities combine to form a combined quantity of 11. Students explain the order in which the addends are combined does not affect the resulting sum (MP.3). Students generalize this idea (the commutative property) to all addition situations, for example, explaining that switching two piles of counters doesn't change how many are there (MP.7). Similarly, students notice the order and manner in which multiple addends are combined does not affect the sum (the associative property). Students reason 10 - 8 = ? also means 8 + ? = 10; therefore, they solve the problem by asking themselves what is the number added to 8 to make 10 (MP.2).	

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Operations and Algebraic Thinking

1.OA.3 Apply properties of operations as strategies to add and subtract. **MP. 2, MP.7**	Priority Standard
1.OA.4 Understand subtraction as an unknown-addend problem. **MP. 2, MP.7**	Priority Standard
1.OA.5-Relate counting to addition and subtraction. **MP.5, MP.8**	Supporting Standard

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Priority Standards and Instructional Unit 7

1st Grade Math
Unit: 7

**This unit is designed around these practice standards: Students make sense of equations such as 4 + 6 = 7 + 3, interpreting the equal sign to mean expressions on each side represent the same quantity (MP.1). Students justify whether an equation is true or false, not just by solving both sides, but by using relational thinking. For example, in the equation 10 + 5 = 6 + 11 students recognize both addends on the right are larger than the ones on the left, so the equation is false (MP.3). This reasoning is used to solve missing-value problems such as 8 + 5 = __ + 6. Students reason that because 6 is one more than 5, the missing addend must be one less than 8 (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.*

Operation and Algebraic Thinking

1.OA.7-Understand the meaning of the equal sign and determine if equations involving addition and subtraction are true or false. **MP. 2, MP.3**	Priority Standard
1.OA.8-Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. **MP. 1, MP.2**	Supporting Standard

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Priority Standards and Instructional Unit 8

1st Grade Math
Unit: 8

**This unit is designed around these practice standards: Students understand the individual digits in a two-digit numeral each represent units of ten and one respectively. Students use tools to represent numbers, selecting tools such as popsicle sticks, linking cubes and straws that can physically be grouped in tens (MP.5). In representing numbers with concrete tools, students see one ten unit (a bundle) can be thought of as "10, two as twenty and so forth (MP.7). When comparing two two-digit numbers, students interpret the inherent value of each digit (22 is two tens with two remaining ones) and determine which number is larger (MP.2). For example, students realize that 32 is greater than 23 because of the value of its digits.

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Operations and Algebraic Thinking

1.OA.6-Add and subtract within 20. **b.** Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making 10; decomposing a number leading to a 10; using the relationship between addition and subtraction; creating equivalent but easier or known sums. **MP.2, MP.7, MP.8**	Priority Standard

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Priority Standards and Instructional Unit 9

1st Grade Math
Unit: 9

**This unit is designed around these practice standards: Students understand the individual digits in a two-digit numeral each represent units of ten and one respectively. Students use tools to represent numbers, selecting tools such as popsicle sticks, linking cubes and straws that can physically be grouped in tens (MP.5). In representing numbers with concrete tools, students see one ten unit (a bundle) can be thought of as "10, two as twenty and so forth (MP.7). When comparing two two-digit numbers, students interpret the inherent value of each digit (22 is two tens with two remaining ones) and determine which number is larger (MP.2). For example, students realize that 32 is greater than 23 because of the value of its digits.	

**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.

Number and Operations in Base Ten

1.NBT.3-Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <. **MP. 2**	Priority Standard

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Priority Standards and Instructional Unit 10

1st Grade Math
Unit: 10

**This unit is designed around these practice standards: Students realize mathematics involves interpreting the meaning of problems and endeavoring to solve problems by selecting useful and appropriate tools and manipulatives (MP.1, MP.5). When reading/interpreting word problems, students recognize a number (seven or 17) represents a quantity (7 dots or 17 people) and consider what is happening to these quantities in the context of the problem (MP.2). Students represent situations using numbers and symbols. For example, students translate "There are ten apples. Some were eaten. Three remain. How many were eaten?" into an equation such as 10 – __ = 3? (MP.4)

***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.*

Operations and Algebraic Thinking

1.OA.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart and comparing, with unknowns in all positions. **MP. 1, MP.2**	Priority Standard
1.OA.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, by using objects, drawings and equations with a symbol for one unknown number to represent the problem. **MP. 1, MP.4, MP.5**	Supporting Standard

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Priority Standards and Instructional Unit 11

1st Grade Math
Unit: 11

**This unit is designed around these practice standards: Students create carefully worded questions to be answered by their peers and gather data (MP.6). For example, a student may wonder about the way each classmate gets to school (walk, ride bus, car-rider). In both gathering data and creating a representation of data, students design what makes sense to them and helps them to answer the question posed (MP.1). Students create a table/chart representing the data collected, knowing the table/chart provides insights to answer their question (MP.4). Students make observations from the data and listen and critique other student observations, ultimately explaining what they learned about the question they posed (MP.3). For example, students observe most students take a bus to school using the data in the table/chart.

***Priority Standards will be summatively assessed throughout Quarter 2. All supporting standards are to be formatively assessed, driving reteaching and instructional adjustments to meet the needs of all students.*

Measurement and Data

1.MD.4-Investigate questions involving categorical data.
   a. Pose a question that can be answered by gathering data.
   b. Determine strategy for gathering data from peers.
   c. Organize and represent data in a table/chart with up to three categories
   d. Interpret data to answer questions about the table/chart that connects to the question posed, including total number of data points, how many in each category and how many more or less are in one category than in another.
MP.1, MP.3, MP.4, MP.6
	Priority Standard

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Priority Standards and Instructional Unit 12

1st Grade Math
Unit: 12

**This unit is designed around these practice standards: Students recognize when solving a problem such as 33 + 20 that the 3 in the ones place will not change, but the 3 in the tens place will; additionally, they will reason this is because they are adding two tens (MP.7, MP.8). Students generalize this idea, explaining units of tens can be added or subtracted and apply this idea to adding multiples of 10 (MP.2). Students select a strategy for adding or subtracting, including the following: using tools, drawing pictures, jumps on a number line and/or jumps on a hundred chart. They explain which tool or model they selected, how they reasoned about the problem and how they know their answer is correct (MP.1, MP.3). Students apply strategies used to solve single-digit addition/subtraction situations in the range of 1-9 to solve addition/subtraction situations in the range of 10-90. For example, extending the Make 10 Strategy to a Make 40 strategy for adding 38 + 9 (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.**

Number and Operations in Base Ten

1.NBT.4-Add within 100 including adding a two-digit number and a one-digit number. Add a two-digit number and a multiple of 10.
    a. Add within 100 using…
        ○ concrete models or drawings;
        ○ strategies based on place value;
        ○ properties of operations;
        ○ • the relationship between addition and subtraction.
    b. Relate the addition strategy to a written method and explain the
	Priority Standard

reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. **MP.7, MP.2, MP.3**	
1.NBT.5-Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. **MP.2, MP.8**	Priority Standard

1.NBT.6-Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences).
    a. Subtract using:
        ○ Concrete models or drawings;
        ○ Strategies based on place value;
        ○ Properties of operations;
        ○ The relationship between addition and subtraction
    b. Relate the subtraction strategy to a written method and explain the reasoning used.
	Supporting Standard

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Priority Standards and Instructional Unit 13

1st Grade Math
Unit: 13

**This unit is designed around these practice standards: Students realize the specific logic of an analog clock, recognizing the shorter moving part on an analog clock is called the "hour hand" and its position (relative to the encircling numerals) indicates what hour it is (MP.6). Students recognize patterns in how the hour and minute hands operate. For example, they notice at 4:30, the minute hand is halfway around the clock (at the six) and the hour hand is halfway between the four and the five (MP.8). Students understand four-thirty is expressed numerically using a digital clock (MP.2). With money, students use appropriate terms to describe coins and connect the coin names to their values (MP.2, MP.6).

***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.*

Measurement and Data

1.MD.3-Assign values to time and money.
     a. Tell and write time in hours and half-hours using analog and digital clocks.
     b. Identify the coins by values (penny, nickel, dime, quarter).
  MP.6, MP.8
	Priority Standard

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Priority Standards and Instructional Unit 14

1st Grade Math
Unit: 14

**This unit is designed around these practice standards: Through analyzing many shapes and making sense of what they have in common, students determine what attributes define a shape versus attributes that do not define a shape (MP.7). For example, students describe defining characteristics of a triangle such as straight sides, three sides, three angles or three points and describe non-defining characteristics such as blue, big or heavy (MP.3, MP.7). Students use knowledge of defining attributes to build and/or draw examples and non-examples of these shapes, attending to those attributes which define the shape (MP.6). Students may compare their drawings and discover a square is a square regardless of its color, size or orientation (MP.7).	
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	
1.G.1-Distinguish between defining attributes versus non-defining attributes; build and draw shapes to possess defining attributes. **MP.7**	Priority Standard
1.G.2-Compose shapes. a. Compose two-dimensional shapes to create rectangles, squares, trapezoids, triangles, half-circles, quarter-circles and composite shapes to compose new shapes from the composite shapes.	Supporting Standard

b. Use three-dimensional shapes (cubes, right rectangular prisms, right circular cones and right circular cylinders) to create a composite shape and compose new shapes from the composite shapes. **MP.1, MP.4**	
1.G.3- Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths and quarters, and use the phrases half of, fourth of and quarter of. Describe the whole as two of or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares. **MP.3, MP.6**	Supporting Standard