

Second Grade Math Units of Instruction 2020-2021



Grade 2 Math



Priority Standards and Instructional Unit 1

2nd Grade Math

Unit: 1

****This unit is designed around these practice standards:** Students use concrete, groupable objects (counters in cups, unifix cubes in stacks) to show that 10 tens make one hundred and 10 hundreds make one thousand (MP.5, MP.7). Using place value structure, students build a physical model of a number and then practice saying it, eventually moving to written form (MP.7). When comparing 2 three-digit numbers, students interpret the inherent value of each digit (234 is two hundreds, three tens and 4 ones) and determine which number is larger (MP.7). In building numbers, students see the equivalence of numbers written in standard form and expanded form (MP.7). In addition, they reason about which number is greater using their place value understanding (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 Operation in Base Ten

2.NBT.1-Understand that the three digits of a three-digit number represents amounts of hundreds, tens and ones. Understand the following as special cases

- a. 100 can be thought of as a bundle of ten tens — called a “hundred.”
- b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).

MP.2, MP.7

Priority Standard

2.NBT.2-Count forwards and backwards within 1000; skip-count by 5s, 10s and 100s.

Priority Standard

<p>2.NBT.3-Read and write numbers to 1000 using base-ten numerals, number names and expanded form. MP.7</p>	Priority Standard
<p>2.NBT.4-Compare two three-digit numbers based on the meaning of the hundreds, tens and ones digits, using $>$, $=$, and $<$ symbols to record the results of the comparisons.</p>	Priority Standard

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Priority Standards and Instructional Unit 2

2nd Grade Math

Unit: 2

****This unit is designed around these practice standards:** When reading/interpreting word problems, students recognize a number (eight or 8) represents a quantity (eight buttons) and consider what is happening to these quantities in the context of the problem (MP.2). Students experiment in different ways to solve the problem (MP.4). Students think of questions to ask themselves, such as “Which diagram could help me?” Students work in groups to make addition and subtraction stories using concrete objects/pictures to demonstrate different situations and write an addition or subtraction equation to match their stories (MP.1).

Students select and use reasoning strategies to solve addition and subtraction problems efficiently. For example, for $8 + 7$, a student decides to use a make 10 strategy, while another student notices the answer is one more than $7 + 7$ (a known double fact). Students notice these patterns and through experiences such as games, become more efficient at applying the strategies eventually reaching automaticity (MP.8). Students use 10 as a benchmark in solving problems and recognize the relationship between addition and subtraction, recognizing these relationships lead to more efficient ways to add and subtract than counting. For example, to solve $16 - 9$, a student counts up to 10 (1) and up to 16 (6) to get the answer of 7 (MP.7).

Students use contexts and visuals to reason about whether numbers are even or odd (MP.2). They notice if a number can be decomposed (broken apart) into two equal addends ($16 = 8+8$), then it is even, or if they group the number in twos it is even (MP. 7). They build on the idea of two equal sized groups to adding more equal sized groups. Students use concrete objects (counters) and pictorial representations (arrays) to explore repeated addition of equal sized groups (MP. 5). Students recognize in a rectangular array there are two ways to have same sized groups (rows or columns) and they can choose either way to find the total (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.

Operations and Algebraic Thinking

2.OA.1-Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart and comparing, with unknowns in all positions, by using drawings and equations with a symbol for the unknown number to represent the problem.
MP.1, MP.2, MP.4

Priority Standard

2.OA.2-Fluently add and subtract within 20 using mental strategies.
MP.2, MP.7, MP.8

Priority Standard

2.OA.3 Determine whether a group of objects (up to 20) has an odd or even number of members; write an equation to express an even number as a sum of two equal addends.
MP.2, MP.7

Supporting Standard

2.MD.6-Represent whole numbers as lengths from 0 on a number line with equally spaced points corresponding to the numbers 0, 1, 2, ... and represent whole-number sums and differences within 100 on a number line.
MP.3, MP.4

Priority Standard

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Priority Standards and Instructional Unit 3

2nd Grade Math
Unit: 3

****This unit is designed around these practice standards:** Students notice their knowledge of tens and ones can be used to solve addition problems. For example, decomposing $24 + 42$ into tens and ones: $20 + 40 + 4 + 2$ (MP. 8). For other problems, students choose to use a counting up/back strategy. For $57 - 18$, students use an open number line and jump back 20 (to 37) and then up 2 (to 39). Students select among their repertoire of strategies based on the numbers in the problem (MP.1, MP.2). These strategies are extended to adding strings of numbers as well as larger numbers. Students explain their strategies, critique the strategies shared by others and reflect on which strategies are efficient for the problem posed (MP.3). Students notice when numbers are added or subtracted in the base-ten system, like units are added or subtracted (ones are added to ones, tens to tens, hundreds to hundreds) and use this pattern to solve problems mentally (MP.8).

****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.**

Number and Operations in Base Ten

2.NBT.5-Fluently add and subtract within 100 using strategies based on place value, properties of operations and/or the relationship between addition and subtraction.
MP.2, MP.8

Priority Standard

2.NBT.6- Add up to four two-digit numbers using strategies based on place value and properties of operations.

Supporting Standard

<p>2.NBT.7-Add and subtract within 1000.</p> <p>a. Represent and solve addition and subtraction problems using:</p> <ul style="list-style-type: none"> ● concrete models or drawings; ● strategies based on place value; ● properties of operations; ● the relationship between addition and subtraction and; ● relate drawings and strategies to expressions or equations. <p>b. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.</p> <p>MP.1, MP.5</p>	<p>Priority Standard</p>
<p>2.NBT.8-Mentally add 10 or 100 to a given number 100–900 and mentally subtract 10 or 100 from a given number 100-900.</p> <p>MP.7, MP.8</p>	<p>Priority Standard</p>
<p>NBT.9-Explain why addition and subtraction strategies work, using place value and the properties of operations.</p> <p>MP.3, MP.7</p>	<p>Priority Standard</p>

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Priority Standards and Instructional Unit 4

2nd Grade Math Unit: 4

****This unit is designed around these practice standards:** Students use concrete, groupable objects (counters in cups, unifix cubes in stacks) to show that 10 tens make one hundred and 10 hundreds make one thousand (MP.5, MP.7). Using place value structure, students build a physical model of a number and then practice saying it, eventually moving to written form (MP.7). When comparing 2 three-digit numbers, students interpret the inherent value of each digit (234 is two hundreds, three tens and 4 ones) and determine which number is larger (MP.7). In building numbers, students see the equivalence of numbers written in standard form and expanded form (MP.7). In addition, they reason about which number is greater using their place value understanding (MP.2).

Students make sense of linear-focused story problems, using number lines and bar diagrams to make sense of the situation (MP.1, MP.4). Students use the number line as a reasoning strategy to add or subtract and explain their reasoning. In addition, they listen to other students' ways to use the number line to solve problems and compare strategies with a focus on which strategies are efficient for the given problem (MP.3).

****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.**

Measurement and Data

2.MD.1-Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks and measuring tapes.
MP.5, MP.6

Priority Standard

<p>2.MD.2 Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.</p>	Supporting Standard
<p>2.MD.3 Estimate lengths using units of inches, feet, yards, centimeters and meters.</p>	Supporting Standard
<p>2.MD.4-Measure to determine how much longer one object is than another, expressing the length difference in terms of either a customary or metric standard length unit. MP.5, MP.6</p>	Priority Standard
<p>2.MD.5-Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units by using drawings and equations with a symbol for the unknown number to represent the problem. MP.1, MP.4</p>	Supporting Standard

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Priority Standards and Instructional Unit 5

2nd Grade Math
Unit: 5

****This unit is designed around these practice standards:** Students connect skip-counting by fives and five minute intervals on the clock (MP.8). Students attend to precision as they notice how minutes and hours are determined on analog and digital clocks, as well as whether to label the time as a.m. or p.m. (MP.6). Students makes sense of authentic problems involving money, using actual coins or representations of coins and use these coins to solve the problem (MP.1). As students solve such problems, they write equations to represent the situation, using units (\$) or ¢) to correctly communicate the quantities (MP.4).

****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.**

Measurement and Data

2.MD.7-Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.
MP.5, MP.6

Priority Standard

2.MD.8-Solve word problems with adding and subtracting within 100, (not using dollars and cents simultaneously) using the \$ and ¢ symbols appropriately (not including decimal notation).
MP.1, MP.5

Priority Standard

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Priority Standards and Instructional Unit 6

2nd Grade Math Unit: 6

****This unit is designed around these practice standards:** Students understand the purpose of creating a graph is to make sense of data related to a question (MP.1). They look at the data they have collected and decide how to set up a graph, labeling it so anyone can understand what the data represents (MP.6). Students select a graph that makes sense, recognizing a dot plot is for numeric data while bar and pictographs are for categorical data (MP.1). Students analyze the data in their graphs, noticing relationships such as how many more fall in one category than another and relating those observations back to the original question they posed (MP.2).

****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

K.MD.10-Create a pictograph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put together, take-apart and compare problems using information presented in a bar graph.

MP.2, MP.6

Priority Standard

K.MD.9-Investigate questions involving measurements.

- a. Identify a statistical question focused on measurements.
- b. Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object.

Supporting Standard

c. Show the measurements by making a dot plot, where the horizontal scale is marked off in whole-number units.

MP.1, MP.6

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Priority Standards and Instructional Unit 7

2nd Grade Math

Unit: 7

****This unit is designed around these practice standards:** Students select and use reasoning strategies to solve addition and subtraction problems efficiently. For example, for $8 + 7$, a student decides to use a make 10 strategy, while another student notices the answer is one more than $7 + 7$ (a known double fact). Students notice these patterns and through experiences such as games, become more efficient at applying the strategies eventually reaching automaticity (MP.8). Students use 10 as a benchmark in solving problems and recognize the relationship between addition and subtraction, recognizing these relationships lead to more efficient ways to add and subtract than counting. For example, to solve $16 - 9$, a student counts up to 10 (1) and up to 16 (6) to get the answer of 7 (MP.7).

Students notice their knowledge of tens and ones can be used to solve addition problems. For example, decomposing $24 + 42$ into tens and ones: $20 + 40 + 4 + 2$) (MP. 8). For other problems, students choose to use a counting up/back strategy. For $57 - 18$, students use an open number line and jump back 20 (to 37) and then up 2 (to 39). Students select among their repertoire of strategies based on the numbers in the problem (MP.1, MP.2). These strategies are extended to adding strings of numbers as well as larger numbers. Students explain their strategies, critique the strategies shared by others and reflect on which strategies are efficient for the problem posed (MP.3). Students notice when numbers are added or subtracted in the base-ten system, like units are added or subtracted (ones are added to ones, tens to tens, hundreds to hundreds) and use this pattern to solve problems mentally (MP.8).

Students make sense of linear-focused story problems, using number lines and bar diagrams to make sense of the situation (MP.1, MP.4). Students use the number line as a reasoning strategy to add or subtract and explain their reasoning. In addition, they listen to other students' ways to use the number line to solve problems and compare strategies with a focus on which strategies are efficient for the given problem (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.**

Operation and Algebraic Thinking

2.OA.2-Fluently add and subtract within 20 using mental strategies.
MP.2, MP.7, MP.8

Priority Standard

Number and Operation in Base 10

2.NBT.5-Fluently add and subtract within 100 using strategies based on place value, properties of operations and/or the relationship between addition and subtraction.
MP.2, MP.8

Priority Standard

2.NBT.6-Add up to four two-digit numbers using strategies based on place value and properties of operations.
MP.2, MP.7

Supporting Standard

Measurement and Data

2.MD.6-Represent whole numbers as lengths from 0 on a number line with equally spaced points corresponding to the numbers 0, 1, 2, ... and represent whole-number sums and differences within 100 on a number line.
MP.3, MP.4

Supporting Standard

Grade 2 Math



Priority Standards and Instructional Unit 8

2nd Grade Math

Unit: 8

****This unit is designed around these practice standards:** Students use contexts and visuals to reason about whether numbers are even or odd (MP.2). They notice if a number can be decomposed (broken apart) into two equal addends ($16 = 8+8$), then it is even, or if they group the number in twos it is even (MP. 7). They build on the idea of two equal sized groups to adding more equal sized groups. Students use concrete objects (counters) and pictorial representations (arrays) to explore repeated addition of equal sized groups (MP. 5). Students recognize in a rectangular array there are two ways to have same sized groups (rows or columns) and they can choose either way to find the total (MP.2).

Students use concrete, groupable objects (counters in cups, unifix cubes in stacks) to show that 10 tens make one hundred and 10 hundreds make one thousand (MP.5, MP.7). Using place value structure, students build a physical model of a number and then practice saying it, eventually moving to written form (MP.7). When comparing 2 three-digit numbers, students interpret the inherent value of each digit (234 is two hundreds, three tens and 4 ones) and determine which number is larger (MP.7). In building numbers, students see the equivalence of numbers written in standard form and expanded form (MP.7). In addition, they reason about which number is greater using their place value understanding (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.***

Measurement and Data

2.OA.4-Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

Priority Standard

MP.2, MP.4	
Number and Operations in Base 10	
2.NBT.2 - Count forwards and backwards within 1000; skip-count by 5s, 10s and 100s. MP.8, MP. 1, MP. 6	Priority Standard
Geometry	
2.G.2 -Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	Supporting Standard

Grade 2 Math



Priority Standards and

Instructional Unit 9

2nd Grade Math Unit: 9

****This unit is designed around these practice standards:** Students describe attributes they notice for a group of shapes, such as sides and angles for 2-dimensional shapes and number of faces for 3- dimensional shapes (MP.6). They explain what characteristics are true for all shapes following in the same category (for example, attributes that are true for all triangles), as well as attributes true for some triangles, but not all triangles. Students use tiles to equally cover the rectangle and use repeated addition to determine the number of unit squares in the rectangle, noticing the pattern of equal rows (groups) (MP. 8). Students partition circles and rectangles into up to 4 equal parts. Students use a variety of tools to show halves, fourths and thirds (MP.5). They partition rectangles into thirds and fourths in different ways, showing and explaining the parts do not need to be the same shape, only the same size (MP.2, MP.3). Conversely, students identify shapes that are incorrectly partitioned, with the sections not being the same size.

****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

2.G.1 -Recognize and draw shapes having specified attributes, such as a given number of angles or sides. Identify triangles, quadrilaterals, pentagons, hexagons and cubes (identify number of faces).

Supporting Standard

2.G.2 -Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	Supporting Standard
2.G.3 -Partition circles and rectangles into two, three, or four equal shares; describe the shares using the words halves, thirds, half of, a third of, etc.; and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape	Priority Standard