

Diocese of Phoenix Math Standards
Second Grade

Operations and Algebraic Thinking (OA) Represent and solve problems involving addition and subtraction	
2021	Standard
2.OA.1	Use addition and subtraction within 100 to solve one- and two-step word problems. ☐ Unknowns in all positions. ☐ Adding to, taking from, putting together, taking apart, comparing. ☐ Use drawings, equations with a symbol for the unknown. DG2-S1-C2-DPO1 Solve word problems using addition and subtraction of two 2 and 3 digit numbers, with regrouping. DG2-S3-C3-PO2 Find the missing element: ☐ Sums through 18: Find addend or sum. ☐ Minuends through 9: Find subtrahend, minuend, or difference. DG4-S1-C1-DPO9 Compare and order decimals using concrete and illustrated models. (thousandths)
2.OA.2	Fluently add and subtract within 20 using mental strategies. *By end of Grade 2, know from memory all sums of two one-digit numbers. DG2-S1-C2-PO3 State addition and subtraction facts for sums. DG2-S1-C2-PO4 Add one and two digit whole numbers without regrouping. DG2-S1-C2-PO5 Subtract one and two-digit whole numbers without regrouping. DG2-S1-C2-PO6 Add three one or two digit addends.
2.OA.3	Determine whether a group of objects (up to 20) has an odd or even number of members. ☐ Pair the objects. ☐ Count by 2s.

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	□ Write an equation to express an even number as a sum of 2 equal addends. DG2-S1-C1-PO10 Identify odd and even whole numbers (including 0) through 999.
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. DG2-S1-C2-DPO2 Demonstrate with models to show the process used in multiplication (uses repeated addition, counts by multiples, combines things that come in groups of equal size, make arrays, uses area models). DG5-S3-C3-DPO1 Create numerical and algebraic expressions and equations using contextual situations.

Number and Operation in Base Ten (NBT) Understand place value	
2021	Standard
2.NBT.1	Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones. Understand the following as special cases: □ 100 can be thought of as a bundle of ten tens—called a “hundred.” □ 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). DG2-S1-C1-DPO1 State verbally and write whole numbers through 999 using correct place value.
2.NBT.2	Count within 1000; skip-count by 5s, 10s, and 100s. DG2-S1-C1-PO3 Count aloud forward or backward in consecutive order (0 through 999). DG3-S1-C1-PO21 Determine multiples of a given whole number with products through 24 (skip counting).

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2.NBT.3	Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. DG2-S1-C1-DPO1 State verbally and write whole numbers through 999 using correct place value. DG2-S1-C1-PO9 Apply expanded notation to model place value through 999.
2.NBT.4	Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons. DG2-S1-C1-DPO2 Compare and order whole numbers through 1,000. DG2-S1-C2-DPO13 Apply symbols: $+$, $-$, $\times$, $\div$, $=$, $\neq$, $\%$
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. DG2-S1-C2-PO3 State addition and subtraction facts for sums. DG2-S1-C2-PO4 Add one and two digit whole numbers without regrouping. DG2-S1-C2-PO5 Subtract one and two digit whole numbers without regrouping. DG2-S1-C2-PO6 Add three one or two digit addends.
2.NBT.6	Add up to four two-digit numbers using strategies based on place value and properties of operations. DG3-S1-C2-PO4 Add a column of numbers.
2.NBT.7	Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. ☐ Relate the strategy to a written method. ☐ Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones. ☐ Understand that sometimes it is necessary to compose or decompose tens or hundreds. DG3-S1-C2-PO2 Add two three-digit whole numbers.

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	DG3-S1-C2-PO1 Demonstrate the process of subtraction using manipulatives through three-digit whole numbers.
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. DG2-S1-C3-PO1 Solve problems using a variety of mental computations and reasonable estimation.
2.NBT.9	Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanations may be supported by drawings or objects.)

Measurement and Data (MD) Measure and estimate lengths in standard units	
2021	Standard
2.MD.1	Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. DG2-S4-C4-PO6 Measure a given object using the appropriate unit of measure (length: inches, miles; Capacity/Volume: pints, quarts; Mass/ Weight: ounces).
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.
2.MD.3	Estimate lengths using units of inches, feet, centimeters, and meters. DG2-S1-C3-PO2 Estimate the measurement of an object using U.S. customary standard and non-standard units of measurement.

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2.MD.4	Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. DG3-S4-C4-PO6 Compare units of measure to determine more or less relationships for: ☐ length – inches to feet ☐ centimeters to meters ☐ time – minutes to hours ☐ hours to days; days to weeks; months to years ☐ money – pennies, nickels, dimes, quarters, and dollars
2.MD.5	Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. DG4-S3-C3-PO3 Solve one-step equations with one variable represented by a letter or symbol using multiplication of whole numbers (e.g., $12 = n \times 4$).
2.MD.6	Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.
2.MD.7	Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. DG2-S4-C4-DPO1 Tell time to the nearest minute using analog and digital clocks.
2.MD.8	Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have? DG2-S1-C2-PO17 Add and subtract money without regrouping using manipulatives and paper and pencil through \$5.00.
2.MD.9	Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.

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	DG5-S2-C1-PO2 Construct a double-bar graph, line plot, frequency table, or three-set Venn diagram with appropriate labels and title from organized data.
2.MD.10	Draw a picture graph 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. DG2-S2-C1-DPO1 DG2-S2-C1-PO4 Make a graph (horizontal bar, vertical bar, pictograph or tally chart) with appropriate labels from organized data.

Geometry (G) Reason with shapes and their attributes	
2021	Standard
2.G.1	Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. (Sizes are compared directly or visually, not compared by measuring.) DG2-S4-C1-DPO1 Identify draw and compare two and three dimensional shapes by name and attributes. DG2-S4-C2-PO1 Recognize the same shape in different positions.
2.G.2	Partition a rectangle into rows and columns of same-size squares and count to find the total number of them. DG3-S1-C2-PO7 Demonstrate the process of multiplication as repeatedly adding the same number, counting by multiples, combining equal sets, and making arrays.
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.

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Computation (C) Students solve simple problems involving addition and subtraction of numbers up to 100	
2021	Standard
2.C.1	Model addition of numbers less than 100 with objects and pictures.
2.C.2	Locate and place numbers on a number line up to 100.
2.C.3	Add two whole numbers less than 100 with and without regrouping.
2.C.4	Subtract two whole numbers less than 100 with and without regrouping.
2.C.5	Understand and use the inverse relationship between addition and subtraction.
2.C.6	Use estimation to decide whether answers are reasonable in addition problems.
2.C.7	Use mental arithmetic to add or subtract 0, 1, 2, 3, 4, 5, or 10 with numbers less than 100.