Alaska Mathematics

Grade 2

Adopted 2012

Standards for Mathematical Practice

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

Operations and Algebraic Thinking

Represent and solve problems involving addition and subtraction.

1. Use addition and subtraction strategies to estimate, then solve one- and two-step word problems (using numbers up to 100) involving situations of adding to, taking from, putting together, taking apart and comparing, with unknowns in all positions (e.g., by using objects, drawings and equations). Record and explain using equation symbols and a symbol for the unknown number to represent the problem. 2.OA.1

Add and subtract using numbers up to 20.

2. Fluently add and subtract using numbers up to 20 using mental strategies. Know from memory all sums of two one-digit numbers. 2.OA.2

Work with equal groups of objects to gain foundations for multiplication.

3. Determine whether a group of objects (up to 20) is odd or even (e.g., by pairing objects and comparing, counting by 2s). Model an even number as two equal groups of objects and then write an equation as a sum of two equal addends. 2.OA.3
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 repeated addition (e.g., array of 4 by 5 would be 5 + 5 + 5 + 5 = 20). 2.OA.4

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Identify and continue patterns.

5. Identify, continue and label number patterns (e.g., aabb, abab). Describe a rule that determines and continues a sequence or pattern. 2.OA.5

Number and Operations in Base Ten

Understand place value.

1. Model and identify place value positions of three digit numbers. Include: 2.NBT.1
   a. 100 can be thought of as a bundle of ten tens --called a "hundred". 2.NBT.1.A
   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). 2.NBT.1.B
2. Count up to 1000, skip-count by 5s, 10s and 100s. 2.NBT.2
3. Read, write, order up to 1000 using base-ten numerals, number names and expanded form. 2.NBT.3
4. Compare two three-digit numbers based on the meanings of the hundreds, tens and ones digits, using >, =, < symbols to record the results. 2.NBT.4

Use place value understanding and properties of operations to add and subtract.

5. Fluently add and subtract using numbers up to 100. Use:
strategies based on place value
properties of operations
and/or the relationship between addition and subtraction. 2.NBT.5
6. Add up to four two-digit numbers using strategies based on place value and properties of operations. 2.NBT.6
7. Add and subtract using numbers up to 1000. Use:
concrete models or drawings and strategies based on place value
properties of operations   and/or relationship between addition and subtraction. Relate the strategy to a written method and explain the reasoning used. Demonstrate in adding or subtracting three-digit numbers, hundreds and hundreds are added or subtracted, tens and tens are added or subtracted, ones and ones are added or subtracted and sometimes it is necessary to compose a ten from ten ones or a hundred from ten tens. 2.NBT.7
8. Mentally add 10 or 100 to a given number 100-900 and mentally subtract 10 or 100 from a given number. 2.NBT.8
9. Explain or illustrate the processes of addition or subtraction and their relationship using place value and the properties of operations. 2.NBT.9

Measurement and Data

Measure and estimate lengths in standard units.

1. Measure the length of an object by selecting and using standard tools such as rulers, yardsticks, meter sticks, and measuring tapes. 2.MD.1
2. Measure the length of an object twice using different length units for the two measurements. Describe how the two measurements relate to the size of the unit chosen. 2.MD.2

   Estimate, measure and draw lengths using whole units of inches, feet, yards, centimeters and meters. 2.MD.3

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4. Measure to compare lengths of two objects, expressing the difference in terms of a standard length unit. 2.MD.4

Relate addition and subtraction to length.

5. Solve addition and subtraction word problems using numbers up to 100 involving length that are given in the same units (e.g., by using drawings of rulers). Write an equation with a symbol for the unknown to represent the problem. 2.MD.5
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.6

Work with time and money.

7. Tell and write time to the nearest five minutes using a.m. and p.m. from analog and digital clocks. 2.MD.7
8. Solve word problems involving dollar bills and coins using the $ and ¢ symbols appropriately. 2.MD.8

Represent and interpret data.

9. Collect, record, interpret, represent, and describe data in a table, graph or line plot. 2.MD.9
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. 2.MD.10

Geometry

Reason with shapes and their attributes.

1. Identify and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces compared visually, not by measuring. Identify triangles, quadrilaterals, pentagons, hexagons and cubes. 2.G.1
2. Partition a rectangle into rows and columns of same-size squares and count to find the total number of them. 2.G.2
3. Partition circles and rectangles into 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. 2.G.3