

# Second Grade Math Standards by Nine Weeks for 2015-2016

First Nine Weeks: Aug. 17 – Oct. 13, 2015

**FIRST 15 DAYS: Establish Classroom Routines and Procedures**

**MODULE 3: Place Value, Counting and Comparison of Numbers to 1,000**

**Understand place value.**

- 2.NBT.1** Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 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).
- 2.NBT.2** Count within 1000; skip-count by 5s<sup>1</sup>, 10s and 100s.
- 2.NBT.3** Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
- 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.

**MODULE 1: Sums and Differences to 20**

**Represent and solve problems involving addition and subtraction.<sup>2</sup>**

- 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, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. (See CCLS Glossary, Table 1.)

**Add and subtract within 20.<sup>3</sup>**

- 2.OA.2** Fluently add and subtract within 20 using mental strategies. (See standard 1.OA.6 for a list of mental strategies.) By end of Grade 2, know from memory all sums of two one-digit numbers.

**Use place value understanding and properties of operations to add and subtract.<sup>4</sup>**

- 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.

**MODULE 4: Addition and Subtraction within 200 with Word Problems**

**Represent and solve problems involving addition and subtraction.**

- 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, e.g., by using drawings and equations with a symbol for the

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<sup>1</sup> Use analog clock to provide a context for skip-counting by 5s.

<sup>2</sup> In this module, word problems focus primarily on result unknown and change unknown situations.

<sup>3</sup> From this point forward, fluency practice with addition and subtraction to 20 is part of the students’ ongoing experience.

<sup>4</sup> The balance of this cluster is addressed in Modules 4 and 5.

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unknown number to represent the problem.

**Use place value understanding and properties of operations to add and subtract.<sup>5</sup>**

- 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.
- 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.
- 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.)

### Second Nine Weeks: Oct. 14 – Dec. 18, 2015

#### MODULE 4: Addition and Subtraction within 200 with Word Problems

**Represent and solve problems involving addition and subtraction.**

- 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, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

**Use place value understanding and properties of operations to add and subtract.<sup>6</sup>**

- 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.
- 2.NBT.6** Add up to four two-digit numbers using strategies based on place value and properties of operations.
- 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; and sometimes it is necessary to compose or decompose tens or hundreds.
- 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.
- 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.)

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<sup>5</sup> In this module, work is limited to within 200. This work is extended to numbers within 1000 in the next module.

<sup>6</sup> In this module, work is limited to within 200. This work is extended to numbers within 1000 in the next module.

## Second Grade Math Standards by Nine Weeks for 2015-2016

### MODULE 2: Addition and Subtraction of Length Units

#### Measure and estimate lengths in standard units.<sup>7</sup>

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

#### Relate addition and subtraction to length.

- 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.
- 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.

### MODULE 7: Problem Solving with Length, Money, and Data

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

- 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.

#### Work with time and money.<sup>8</sup>

- 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?*

#### Represent and interpret 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.

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<sup>7</sup> Focus is on metric measurement in preparation for place value in Module 3. Customary measurement is addressed in Module 7.

<sup>8</sup> Focus on money. Time is taught in Module 8.

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Third Nine Weeks: Jan. 4 – Mar. 8, 2016

### MODULE 7: Problem Solving with Length, Money, and Data

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

- 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.

Measure and estimate lengths in standard units.

- 2.MD.1** Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
- 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 inches, feet, centimeters, and meters.
- 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.

Relate addition and subtraction to length.

- 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.
- 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.

Work with time and money.<sup>9</sup>

- 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?*

Represent and interpret data.

- 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.

### MODULE 8: Time, Shapes, and Fractions

Work with time and money.<sup>10</sup>

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

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<sup>9</sup> Focus on money. Time is taught in Module 8.

<sup>10</sup> Focus on time. Money is addressed in Module 7.

## Second Grade Math Standards by Nine Weeks for 2015-2016

### Reason with shapes and their attributes.<sup>11</sup>

- 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.)
- 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.

### **MODULE 5: Addition and Subtraction Within 1,000 with Word Problems to 100**

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

- 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; and sometimes it is necessary to compose or decompose tens or hundreds.
- 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.
- 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.)

### **Fourth Nine Weeks: Mar. 9 – May 25, 2016**

### **MODULE 5: Addition and Subtraction Within 1,000 with Word Problems to 100**

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

- 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; and sometimes it is necessary to compose or decompose tens or hundreds.
- 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.
- 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.)

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<sup>11</sup> 2.G.2 is addressed in Module 6.

## Second Grade Math Standards by Nine Weeks for 2015-2016

### MODULE 6: Foundations of Multiplication and Division

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

- 2.OA.3** Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.
- 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.

**Reason with shapes and their attributes.**<sup>12</sup>

- 2.G.2** Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.

### FLUENCY

**Add and subtract within 20.**<sup>13</sup>

- 2.OA.2** Fluently add and subtract within 20 using mental strategies. (See standard 1.OA.6 for a list of mental strategies.) By end of Grade 2, know from memory all sums of two one-digit numbers.

**Use place value understanding and properties of operations to add and subtract.**<sup>14</sup>

- 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.

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<sup>12</sup> 2.G.2 is included in this module because the array model is so important to the foundation for multiplication. The balance of this cluster is addressed in Module 8.

<sup>13</sup> From this point forward, fluency practice with addition and subtraction to 20 is part of the students' ongoing experience.

<sup>14</sup> The balance of this cluster is addressed in Modules 4 and 5.