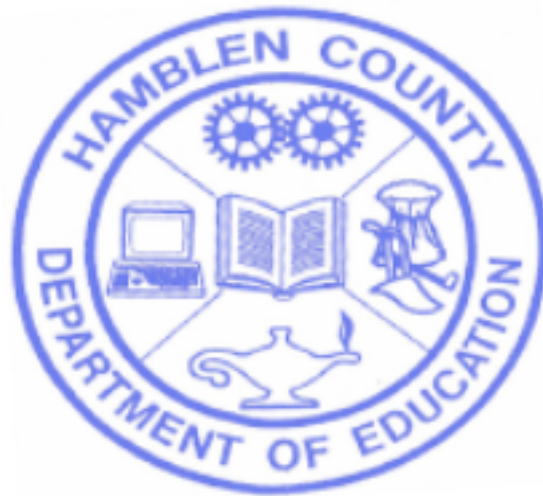


Hamblen County Math Pacing Guide

Second Grade

2015-2016



Hamblen County Math Pacing Guide for Second Grade

In Grade 2, instructional time should focus on four critical areas:

- (1) extending understanding of base-ten notation;
- (2) building fluency with addition and subtraction;
- (3) using standard units of measure; and
- (4) describing and analyzing shapes.

(1) Students extend their understanding of the base-ten system. This includes ideas of counting in fives, tens, and multiples of hundreds, tens, and ones, as well as number relationships involving these units, including comparing. Students understand multi-digit numbers (up to 1000) written in base-ten notation, recognizing that the digits in each place represent amounts of thousands, hundreds, tens, or ones (e.g., 853 is 8 hundreds + 5 tens + 3 ones).

(2) Students use their understanding of addition to develop fluency with addition and subtraction within 100. They solve problems within 1000 by applying their understanding of models for addition and subtraction, and they develop, discuss, and use efficient, accurate, and generalizable methods to compute sums and differences of whole numbers in base-ten notation, using their understanding of place value and the properties of operations. They select and accurately apply methods that are appropriate for the context and the numbers involved to mentally calculate sums and differences for numbers with only tens or only hundreds.

(3) Students recognize the need for standard units of measure (centimeter and inch) and they use rulers and other measurement tools with the understanding that linear measure involves an iteration of units. They recognize that the smaller the unit, the more iterations they need to cover a given length.

(4) Students describe and analyze shapes by examining their sides and angles. Students investigate, describe, and reason about decomposing and combining shapes to make other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades.

Key
Major Content – Bold Print (Make sure to spend at least 60% of your instructional time on these standards.)
Supporting Content - <u>Underlined</u>
Additional Content - <i>Italics</i>

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2nd Grade CCSS – Math First Six Weeks Pacing		
Operations and Algebraic Thinking- Add and Subtract within 20		
2.OA.B.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. (THIS SKILL IS ONGOING ALL YEAR.)	
Number and Operations in Base Ten – Understand Place Value		
2.NBT.1a	100 can be thought of as a bundle of ten tens — called a “hundred.”	
2.NBT.1b	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.A.2	Count within 1000; skip-count by 5s, 10s, and 100s. (0-500 by 100s and 0-250 by 1s, 5s, 10s)	
2.NBT.A.3	Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. (0-250)	
2.NBT.A.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:	
2.NBT.A.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. (2 digit number for this six weeks)	
Notes:		

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2nd Grade CCSS – Math Second Six Weeks Pacing		
Operations and Algebraic Thinking - Work with equal groups of objects to gain foundations for multiplication.		
<u>2.OA.C.3</u>	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.	
Number and Operations in Base Ten – Use place value understanding and properties of operations to add and subtract		
2.NBT.B.5	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. (0-50)	
2.NBT.B.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; sometimes it is necessary to compose or decompose tens or hundreds. (No regrouping for this six weeks)	
Measurement and Data - Relate addition and subtraction to length		
2.MD.B.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.	
Number and Operations in Base Ten – Represent and interpret data		

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2.NBT.B.9	Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanations may be supported by drawings or objects)	
Operations and Algebraic Thinking - Represent and solve problems involving addition and subtraction		
2.OA.A.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 position e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. (one step word problems within 0-50 for this six weeks)	
Number and Operations in Base Ten – Use place value understanding and properties of operations to add and subtract		
2.NBT.B.8	Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.	
Geometry - Reason with shapes and their attributes		
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.)	
Notes:		

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2nd Grade CCSS – Math Third Six Weeks Pacing		
Geometry - Reason with shapes and their attributes		
2.G.2	Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	
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.	
Number and Operations in Base Ten – Understand place value.		
2.NBT.A.2	Count within 1000; skip-count by 5s, 10s, and 100s. (0-1000 by 100s and 0-500 by 1s, 5s, 10s)	
2.NBT.A.3	Read and write numbers to 1,000 using base-ten numerals, number names, and expanded form. (0-500)	
2.NBT.A.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.	
Number and Operations in Base Ten – Use place value understanding and properties of operations to add and subtract		
2.NBT.B.5	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	

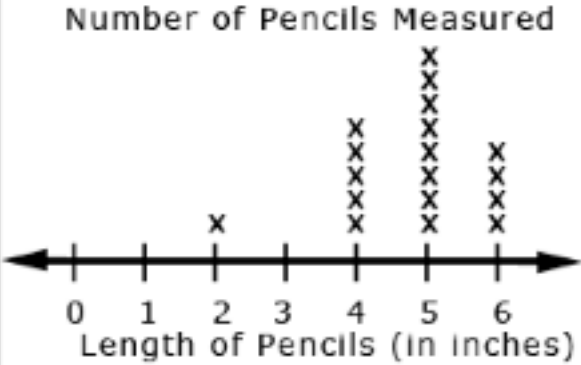
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2.NBT.B.9	Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanations may be supported by drawings or objects)	
2.NBT.B.8	Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.	
2.NBT.B.6	Add up to four two-digit numbers using strategies based on place value and properties of operations.	
Operations and Algebraic Thinking - Represent and solve problems involving addition and subtraction		
2.OA.A.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 position e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. (two - step word problems within 0-50 for this six weeks)	
Notes:		

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2nd Grade CCSS – Math Fourth Six Weeks Pacing		
Number and Operations in Base Ten – Use place value understanding and properties of operations to add and subtract		
2.NBT.B.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; sometimes it is necessary to compose or decompose tens or hundreds.	
Operations and Algebraic Thinking - Represent and solve problems involving addition and subtraction		
2.OA.A.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 position e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	
Measurement and Data - Measure and estimate lengths in standard units		
2.MD.A.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.A.1	Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	
2.MD.A.4	Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.	

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<p>2.MD.A.3</p>	<p>Estimate lengths using units of inches, feet, centimeters, and meters.</p>											
<p>Measurement and Data - Relate addition and subtraction to length</p>												
<p>2.MD.B.5</p>	<p>Relate addition and subtraction to length. 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.</p>											
<p>Measurement and Data - Represent and Interpret Data</p>												
<p><u>2.MD.D.9</u></p>	<p>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.</p> <p>This standard emphasizes representing data using a line plot. Students will use the measurement skills learned in earlier standards to measure objects. Line plots are first introduced in this grade level. A line plot can be thought of as plotting data on a number line. An interactive whiteboard may be used to create and/or model line plots.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p style="text-align: center;">Number of Pencils Measured</p>  <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <caption>Data from Line Plot</caption> <thead> <tr> <th>Length (inches)</th> <th>Number of Pencils</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>1</td> </tr> <tr> <td>4</td> <td>4</td> </tr> <tr> <td>5</td> <td>7</td> </tr> <tr> <td>6</td> <td>3</td> </tr> </tbody> </table> </div>	Length (inches)	Number of Pencils	2	1	4	4	5	7	6	3	
Length (inches)	Number of Pencils											
2	1											
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5	7											
6	3											

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Measurement and Data - Work with Time and Money		
<u>2.MD.C.7</u>	Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	
<u>2.MD.C.8</u>	Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ (dollars) and ¢ (cents) symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?	
Number and Operations in Base Ten - Use place value understanding and properties of operations to add and subtract		
2.NBT.B.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. (Context of money)	
Notes:		

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2nd Grade CCSS – Math Fifth Six Weeks Pacing		
Operations and Algebraic Thinking - Represent and solve problems involving addition and subtraction		
2.OA.A.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 position e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	
Operations and Algebraic Thinking - Add and Subtract within 20		
2.OA.B.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.	
Number and Operations in Base Ten – Use place value understanding and properties of operations to add and subtract.		
2.NBT.B.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.B.6	Add up to four two-digit numbers using strategies based on place value and properties of operations.	
Measurement and Data - Represent and Interpret Data		
2.MD.D.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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<u>2.MD.D.10</u>	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.	
Operations and Algebraic Thinking - Represent and solve problems involving addition and subtraction		
<u>2.OA.C.4</u>	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.	
Notes:		

2nd Grade CCSS – Math Sixth Six Weeks Pacing
Review – Focus on the Major Standards