Pittsburg Unified School District

Second Grade

Teaching Guide for Mathematics

Core Curriculum: California Common Core Mathematics – Focus, Coherence, and Rigor

2015-2016

- Newly introduced standards are in **bold print**
- Standards with ~~strikethroughs~~ are not taught yet
- California Common Core Standards Booklet

California Mathematics Framework - Content and Practice Standards - Grades K-5

	Standards for Mathematical Practices							
	See Survival Kit for Explanation and Examples of Math Practices and Questions to Develop Mathematical Thinking							
	MP1: Make sense of problems and persevere in solving them.	**MP2: Reason abstractly and quantitatively**	**MP3: Construct viable arguments and critique the reasoning of others.**	**MP4: Model with mathematics.**	**MP5: Use appropriate tools strategically**	**MP6: Attend to precision**	**MP7: Look for and make use of structure**	**MP8: Look for and express regularity in repeated reasoning**
Kinder / First / Second / Third / Fourth / Fifth	• Find meaning in problems • Analyze, conjecture and plan solution pathways • Verify answers • Ask themselves the question: "Does this make sense?"	• Make sense of quantities and their relationships in problems • Create coherent representations of problems	• Understand and use information to construct arguments • Make and explore the truth of conjectures • Justify conclusions and respond to arguments of others.	• Apply mathematics to problems in everyday life • Identify quantities in a practical situation • Interpret results in the context of the situation and reflect on whether the results make sense Modeling IS NOT: • "I do," "now you do" • Using manipulatives (that is MP5) • A graph, equation, or function, you can use, but modeling is a process See Mathematics Framework: Appendix D Mathematical Modeling	• Consider the available tools when solving problems • Are familiar with tools appropriate for grade or course (pencil and paper, concrete models, ruler, protractor, calculator, spreadsheet, computer programs, digital content located on a website, and other technological tools)	• Communicate precisely to others • Use clear definitions, state the meaning of symbols and are careful about specifying units of measure and labeling axes • Calculate accurately and efficiently	• Discern patterns and structures • Can step back for an overview and shift perspective • See complicated things as single objects or as being composed of several objects	• Notice if calculations are repeated and look both for general methods and shortcuts • In solving problems, maintain oversight of the process while attending to detail • Evaluate the reasonableness of their immediate results • Understand application of patterns and see the structure in similar situations.

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California Mathematics Framework - Content and Practice Standards - Grades K-5

Mathematical Content Cluster Crosswalk

[m] = major cluster; [s] = supporting cluster; [a] = additional cluster (See Mathematics Framework for explanations – page 3)

	Counting and Cardinality (CC)			Operations and Algebraic Thinking (OA)				
Kinder	**Know number names and the count sequence. [m]**	**Count to tell the number of objects. [m]**	**Compare numbers. [m]**			**Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. [m]**		
First				**Represent and solve problems involving addition and subtraction. [m]**	**Understand and apply properties of operations and the relationship between addition and subtraction. [m]**	**Add and subtract within 20. [m]**	**Work with addition and subtraction equations. [m]**	
Second				**Represent and solve problems involving addition and subtraction. [m]**		**Add and subtract within 20. [m]**	Work with equal groups of objects to gain foundations for multiplication. [s]	
Third				**Represent and solve problems involving multiplication and division. [m]**	**Understand properties of multiplication and the relationship between multiplication and division. [m]**		**Multiply and divide within 100. [m]**	**Solve problems involving the four operations, and identify and explain patterns in arithmetic. [m]**
Fourth							Gain familiarity with factors and multiples. [s]	**Use the four operations with whole numbers to solve problems. [m]** Generate and analyze patterns. [s]
Fifth								Analyze patterns and relationships. [a]

Note: Fifth grade row also contains "Write and Interpret numerical expressions. [a]" in final column.

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California Mathematics Framework - Content and Practice Standards - Grades K-5

	Mathematical Content Cluster Crosswalk						
	[m] = major cluster; [s] = supporting cluster; [a] = additional cluster (See Table 5 for explanations)						
	Number and Operations in Base Ten (NBT)			Number and Operations – Fractions (NF)			
Kinder		Work with numbers 11-19 to gain foundations for place value. [m]					
First	Extend the counting sequence. [m]	Understand place value. [m]	Use place value understanding and properties of operations to add and subtract. [m]				
Second		Understand place value. [m]	Use place value understanding and properties of operations to add and subtract. [m]				
Third			Use place value understanding and properties of operations to perform multi-digit arithmetic. [a]		Develop understanding of fractions as numbers. [m]		
Fourth		Generalize place value understanding for multi-digit whole numbers. [m]	Use place value understanding and properties of operations to perform multi-digit arithmetic. [m]		Extend understanding of fraction equivalence and ordering. [m]	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. [m]	Understand decimal notation for fractions, and compare decimal fractions. [m]
Fifth		Understand the place value system. [m]		Perform operations with multi-digit whole numbers and with decimals to hundredths. [m]		Use equivalent fractions as a strategy to add and subtract fractions. [m]	Apply and extend previous understandings of multiplication and division to multiply and divide fractions. [m]

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California Mathematics Framework - Content Standards - Grades K-5

Mathematical Content Cluster Crosswalk

[m] = major cluster; [s] = supporting cluster; [a] = additional cluster (See Table 5 for explanations)

	Measurement and Data (MD)						Geometry (G)		
Kinder	Describe and compare measurement attributes [a]	Classify objects and count the number of objects in each category [s]					Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres) [a]	Analyze, compare, create, and compose shapes. [a]	
First	**Measure lengths indirectly and by iterating length units. [m]**		Tell and write time. [a]			Represent and interpret data. [s]		Reason with shapes and their attributes. [a]	
Second	**Measure and estimate lengths in standard units. [m]**		Work with time and money. [s]	**Relate addition and subtraction to length. [m]**		Represent and interpret data. [s]		Reason with shapes and their attributes. [a]	
Third	**Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. [m]**				**Geometric measurement: understand concepts of area and relate area to multiplication and to addition. [m]** Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures. [a]	Represent and interpret data. [s]		Reason with shapes and their attributes. [s]	
Fourth	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. [s]				Geometric measurement: understand concepts of angle and measure angles. [a]	Represent and interpret data. [s]		Draw and identify lines and angles, and classify shapes by properties of their lines and angles. [a]	
Fifth	Convert like measurement units within a given measurement system. [s]				**Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. [m]**	Represent and interpret data. [s]		Classify two-dimensional figures into categories based on their properties. [a]	Graph points on the coordinate plane to solve real-world and mathematical problems. [a]

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GRADE 2 - Standards – Benchmark Assessment Map X = Completely covered by end of trimester; X_P = Partially covered by end of trimester		Old CA Standard	Benchmark			
			1	**2**	**3**	**4**
Operations and Algebraic Thinking (2.OA)		2.NS.2.0, 2.NS.3.0	X_P	X_P	X	X
Represent and solve problems involving addition and subtraction. [m]	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 table 1) [Benchmark 1: within 20; Benchmark 2-4: within 100]	2.NS.2.3 2.AF.1.2	X_P	X	X	X
Add and subtract within 20. [m]	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.	2.NS.2.3	X	X	X	X
Work with equal groups of objects to gain foundations for multiplication. [s]	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.	New			X	X
	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.	2.OA.3.1			X	X
Number and Operations in Base Ten (2.NBT)		2.NS.1.0, 2.NS.2.0	X_P	X	X	X
Understand place value. [m]	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: 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).	2.NS.1.1	X	X	X	X
	2. Count within 1000; skip-count by **2s**, 5s, 10s, and 100s. **(CA)** [Benchmark 1: no skip count by 100; Benchmark 2-4: all]	2.NS.1.1	X_P	X	X	X
	3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.	2.NS.1.1. 2.NS.1.2	X	X	X	X
	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.NS.1.3	X	X	X	X
Use place value understanding and properties of operations to add and subtract. [m]	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.NS.2.1		X	X	X
	6. Add up to four two-digit numbers using strategies based on place value and properties of operations.	2.NS.2.2		X	X	X
	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.NS.2.1, 2.NS.2.2, 2.NBT.7		X	X	X
	7.1 Use estimation strategies to make reasonable estimates in problem solving. (CA)	K.NS.3.0	Will not be assessed on a benchmark. Teacher needs to assess.			
	8. Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.	New		X	X	X
	9. Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanations can be supported by drawings or objects.)	2.NS.2.1		X	X	X

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GRADE 2 MATH 2015-2016

Measurement and Data (2.MD)		2.MD.1.0, 5.0, 2.MG.1.0, 2.SDAP.1.0		X_P	X_P	X
Measure and estimate lengths in standard units. [m]	1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	2.MD.1.1			X	X
	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.1.2			X	X
	3. Estimate lengths using units of inches, feet, centimeters, and meters.	New				X
	4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.	New				X
Relate addition and subtraction to length. [m]	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.	New				X
	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.	New				X
Work with time and money. [s]	7. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. **Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year). (CA)**	2.MD.1.4			X	X
	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?*	2.MD.5.1		X	X	X
Represent and interpret data. [s]	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.	2.MD.1.3				X
	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 problems4 using information presented in a bar graph.	2.SDAP.1.1, 2.SDAP.1.2, 2.SDAP.1.4				X
Geometry (2.G)		2.MG.2.0, 2.NS.4.0			X_P	
Reason with shapes and their attributes. [a]	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.MG.2.1	Will not be assessed on a benchmark. Teacher needs to assess.			
	2. Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	New			X	
	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.	2.NS.4.3	Will not be assessed on a benchmark. Teacher needs to assess.			

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Year at a Glance Pacing Summary – Grade 2

Weeks	Dates	# of Days	Units of Instruction
1-4	8/20 – 09/11	17	Unit 1: Addition and Subtraction Strategies
5-6	09/14 – 09/25	10	Unit 2: Place Value - Understanding Three-digit Numbers
7-8	09/28 – 10/09	10	Unit 3: Expressing and Comparing Three-digit Numbers
9	10/13 – 10/16	4	Unit 4: Understanding Money **Benchmark 1 ~ Units 1-3: 10/13 – 10/23** (Official window is 10/05 – 10/23, but give Benchmark 1 after Unit 3 is completed)
10-13	10/19 – 11/13	19	Unit 5: Adding and Subtracting within 100 *Imbed for remainder of year: Solve Add/Subtract Problems within 100 **End of Trimester 1** - **11/13**
14-16	11/16 – 12/11	15	Unit 6: Applying Strategies to Add/Subtract within 1000
17	12/14 - 12/18	5	Unit 7: Relating Skip Counting to Mental Addition and Subtraction
17-20	01/04 – 01/22	14	Unit 8: Solving Problems involving Money
21-22	01/25 – 02/05	9	Unit 9: Skip Counting to Time **Benchmark 2 ~ Units 1-8: 02/01 – 02/11**
23-24	02/08 – 02/19	8	Unit 10: Developing Foundations of Multiplication through Exploring Even and Odd Numbers
25-26	02/22 - 03/04	10	Unit 11: Using Arrays to Foundations of Multiplication **End of Trimester 2** - **03/04**
27-29	03/07 - 03/23	13	Unit 12: Exploring Standard Units of Length
30-31	04/04 – 04/15	10	Unit 13: Relating Addition and Subtraction to Length **Benchmark 3 ~ Units 1-12: 04/04 – 04/15**
32-33	04/18 – 04/29	10	Unit 14: Generating and Representing Measurement Data to Solve Problems
34-35	05/02 – 05/13	10	Unit 15: Estimating and Comparing Lengths
36-37	05/16 – 05/27	10	Unit 16: Reasoning with Shapes and Their Attributes **Benchmark 4 ~ Units 1-15: 05/16 – 05/27**
38	05/31 – 06/03	4	Unit 17: Demonstrate Fluency in Addition and Subtraction* **End of Trimester 3** - **06/08**

*Since this is a culminating unit, all students have been taught these standards, but are now working on showing fluency. Therefore, they will be prepared to show proficiency of these standards on Benchmark 3. However, continue to work on problems for fluency until the end of the year.

Resources for Pacing Guide: Dana Center – University of Austin, Texas, Ca DOE Mathematics Framework, and Ca DOE CCSS Mathematics Standards Booklet

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Trimester 1 Pacing Summary – 2nd Grade

Units 1 – 5

Weeks	Dates	# of Days	Units of Instruction
1-4	8/20 – 09/11	17	Unit 1: Addition and Subtraction Strategies
5-6	09/14 – 09/25	10	Unit 2: Place Value - Understanding Three-digit Numbers
7-8	09/28 – 10/09	10	Unit 3: Expressing and Comparing Three-digit Numbers **Benchmark 1 ~ Units 1-3: 10/13 – 10/23** (Official window is 10/05 – 10/23, but give Benchmark 1 after Unit 3 is completed)
9	10/13 – 10/16	4	Unit 4: Understanding Money
10-13	10/19 – 11/13	19	Unit 5: Adding and Subtracting within 100 *Imbed for remainder of year: Solve Add/Subtract Problems within 100 **End of Trimester 1** - **11/13**

Trimester 1 Standards

OA.1[m]   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.

OA.2[m] ~~Fluently~~ add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers.

NBT.1[m] 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:
  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).

NBT.2[m] Count within 1000; skip count by *2s*, 5s, 10s, ~~and 100s~~. *(CA: skip count by 2s)*

NBT.3[m] Read and Write Numbers to 1000 using base-ten materials, number names, and expanded form.

NBT.4[m] Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using <, = , and > symbols to record the results of comparisons.

NBT.5[m] ~~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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Weeks 1-4	Unit 1: Addition and Subtraction Strategies			08/19 – 09/11 (17 days)
Operations and Algebraic Thinking	**Number and Operations in Base 10**	**Measurement and Data**	**Geometry**	**Math Practices**
OA.1[m] Use addition and subtraction within (20) ~~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.** **OA.2[m]** ~~Fluently~~ **add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers**				MP1 Make sense of problems and persevere in solving them. MP2 Reason abstractly and quantitatively. MP3 Construct viable arguments and critique reasoning of others. MP4 Model with mathematics. MP5 Use appropriate tools logically. MP6 Attend to precision. MP7 Look for and make use of structure. MP8 Look for and express regularity in repeated reasoning.

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In Unit 1, students will begin OA.1 and OA.2by using strategies to add and subtract within 20. Strategies can include Base-ten Blocks, Number Bonds, Comparison Bars, Memorizing Facts, Number Line and Arrow Method (https://www.youtube.com/watch?v=VuOWdxrTki8).   Use Problem Solving sections of the text to develop skills by beginning with discussion as a whole class during Board Math. When students are ready, have them work on a problem of the day independently or for homework. Many of the text problem solving sections in Chapters 1-3 are ideal for Board Math and Number Talks.

Note: Students need to fluently add and subtract within 20 by the end of Grade 2.

Below are suggested Lesson Resources. Refer to the Survival Kit for additional ideas and resources. Lessons can be taught separately, combined, or out of sequence to meet the needs of your students.

When students are adding and subtracting, they will be using place value concepts and the idea of "bundling" a ten to do a trade (**MP2, MP6, MP7, MP8**). When students explain their thinking, they can do so on a number of ways (**MP3**). When students solve word problems, they will use concrete manipulatives, pictorial representations, and/or mental mathematics to make sense of a problem (**MP1, MP5**). Students will reason abstractly and quantitatively as they translate word problems into equations (**MP2**). When working on word problems, students will model with mathematics (**MP4**).

Vocabulary	Suggested Lesson Resources			Manipulatives
Equation addend add (to) put together sum subtract (from) take from solution equal count on count back doubles near doubles	**Chapter 2: Addition Strategies** CCSS Foldable 1 2-1 Addition Properties 2-2 Count on to Add 2-4 Doubles 2-5 Near Doubles 2-6 Make 10 2-7 Add Three Numbers **Use for Board Math,** **or 1-2 problems for homework per day** 2-3 Problem Solving Strategy: Act it Out 2-8 Problem Solving Investigation **Teacher Share:** Number Bond Fact Family Doubles/Near Doubles Dominos	**Chapter 3: Subtraction Strategies** 3-1 Count Back to Subtract 3-2 Subtract all and subtract zero 3-3 Use Doubles to Subtract 3-5 Relate Addition to Subtraction 3-6 Missing Addends 3-7 Fact Families **Use for Board Math,** **or 1-2 Problems for homework per day** 3-8 Problem Solving Investigation **K-5 Math Teaching Resources:** http://www.k-5mathteachingresources.com/2nd-grade-number-activities.html Worksheets for OA.2 **2nd Grade Worksheets:** http://www.2ndgradeworksheets.net/mathccssworksheets.htm Worksheets for OA.2	**Illustrative Mathematics:** https://www.illustrativemathematics.org/2 OA.2 Building toward fluency **MARS Tasks: Grade 1** Pencils and Erasers (2011) Horse Farm (2013) Recess Equipment (2014) **MARS Tasks: Grade 2** Peanuts and Ducks (2003) True or False? (2014) Horse Farm (2013) Insects (2013) Recess Equipment (2014) **Georgia Dept of Ed : Grade 1** https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-3.pdf See Table of Contents, Page 12-13 Any from this unit will support addition and subtraction within 20 ***Pages 19-20 have an assortment of problems for a problem of the day, which you can use within the task, writes on BoardMath, give as a problem of the day for homework/class work, or give you an idea for your own problems.	Base 10 Blocks Two-color Counters Linking Color Cubes Ten Frames
Number Talk Topic Ideas	Dot Cards Doubles/Near Doubles – Use 10 Frames, Dot Cards, Dominos			Ten Frames Two-Color Chips Dot Cards Dominos
Key Dates	First Day of School – 08/19 Holiday: Labor Day - 09/07			

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Weeks 5-6	Unit 2: Place Value – Understanding three-digit numbers			09/14 – 09/25 (10 days)
Operations and Algebraic Thinking	**Number and Operations in Base 10**	**Measurement and Data**	**Geometry**	**Math Practices**
OA.1[m] Use addition and subtraction within (20) ~~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. OA.2[m] ~~Fluently~~ add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers.	**NBT.1[m] 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:** **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).** **NBT.2[m] Count within 1000; skip count by *2s*, 5s, 10s, ~~and 100s~~.** *(CA: skip count by 2s)* **NBT.3[m] Read ~~and write~~ numbers to 1000 using base-ten materials, number names, and expanded form.**			MP1 Make sense of problems and persevere in solving them. MP2 Reason abstractly and quantitatively. MP3 Construct viable arguments and critique the reasoning of others MP5 Use appropriate tools strategically. MP6 Attend to precision. MP7 Look for and make use of structure. MP8 Look for and express regularity in repeated reasoning.

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In this unit, students extend their understanding of the base-ten system by viewing 10 tens as a *hundred*. This lays the groundwork for understanding the structure of the base-ten system as based in repeated bundling in groups of 10. Students can begin reading numbers, but focus on reading in this unit, as writing will be in the next unit. Students will begin to read expanded form when the teacher writes 4 hundreds, 3 tens, and 5 ones (students can write this) to represent 435. Introduce 400 + 30 + 5 in the next unit for students to write.

Note: Count within 1,000. Skip count by 2s, 5s, and 10s, where 2s is a CA standard. Skip count by 100s will be addressed in unit 8. (Skip counting is a foundational skill for multiplication in grade 3.)

Below are suggested Lesson Resources. Refer to the Survival Kit for additional ideas and resources. Lessons can be taught separately, combined, or out of sequence to meet the needs of your students.

Students explain their understanding of three-digit numbers by expressing values in different ways and analyzing other students' representations and explanations of numbers (**MP3, MP6**). Making sense of structure in this unit involves more than just place naming. It Involves understanding that 10 tens makes a hundred (**MP7**). Students may represent numbers using base-ten blocks (**MP1, MP5**). As students represent various numbers with base-ten blocks or pictorial representations, they will associate number names with quantities (**MP2**). With skip counting, students will develop the meaning of written quantities (**MP2**) and explore number patterns and structures in the number system (**MP7**). With counting and computing, students will begin to notice repetitive actions (**MP8**).

Vocabulary	Suggested Lesson Resources		Manipulatives
Ones Tens Hundreds trade or exchange skip count _____ place expanded form digit compare count on pattern 2s, 5s, 10s	**Chapter 10: Numbers to 1,000** CCSS Foldable 7 10-1 Hundreds 10-2 Hundreds, Tens, and Ones 10-3 Problem Solving Strategy: Make a List 10-9 Number Patterns **Team Umizoomi** (Mini 1 minute video clips) Count by 5: http://www.nickjr.com/team-umizoomi/videos/team-umizoomi-count-by-fives/ Count by 10: http://www.digitalpodcast.com/items/8312390	**Chapter 1: Number Sense and Patterns** 1-10 Patterns on a Hundred Chart **Chapter 8: Multiplication and Division Concepts** CCSS6 Skip Count on a Hundred Chart 8-1 Equal Groups (Modify: make groups of 2, 5, 10 only and skip count) **2nd Grade Worksheets:** **http://www.2ndgradeworksheets.net/mathccssworksheets.htm** Worksheets for NBT.1 and NBT.2 **K-5 Math Teaching Resources:** **http://www.k-5mathteachingresources.com/2nd-grade-number-activities.html** Worksheets for NBT.1 and NBT.2	**Illustrative Mathematics:** **https://www.illustrativemathematics.org/2** Tasks under 2.NBT.A.1 – 2.NBT.A.3 **Georgia Dept of Ed:** https://www.georgiastandards.org/Georgia-Standards/Frameworks/2nd-Math-Unit-1.pdf See Table of Content, Page 12-13 Where Am I on the Number Line? Number Hop (no skip counting by 100) What's My Number?	Base-ten blocks Place value mats Place value cards
Number Talks **Topic Ideas**	Double Ten Frames: Adding by Making a 10 Adding Three Numbers - Make a 10		Ten Frame Two-Color Chips
Key Dates			

- Newly introduced standards are in **bold print**
- Standards with ~~strikethroughs~~ are not taught yet
- California Common Core Standards Booklet

GRADE 2 MATH 2015-2016

Weeks 7-8	Unit 3: Expressing and comparing three-digit numbers			09/28 – 10/09 (10 days)
Operations and Algebraic Thinking	**Number and Operations in Base 10**	**Measurement and Data**	**Geometry**	**Math Practices**

OA.1[m]   Use addition and subtraction within (20) 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.
 	
OA.2[m] Fluently add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers.
	NBT.1[m] 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:
	  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).
	
	NBT.2[m] Count within 1000; skip count by *2s*, 5s, 10s, and 100s. *(CA: skip count by 2s)*
	
	NBT.3[m] Read **and write** numbers to 1000 using base-ten materials, number names, and expanded form.
	
	NBT.4[m] Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using <, = , and > symbols to record the results of comparisons.
				MP2 Reason abstractly and quantitatively
				
				MP3 Construct viable arguments and critique reasoning of others
				
				MP6 Attend to precision
				
				MP7 Look for and make use of structure

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In this unit, writing the expanded form of numbers is introduced. Students will write multi-digit numbers in expanded form as a sum of single-digit multiples of powers of ten. For example, 643 = 600 + 40 + 3. Students should also understand multi-digit numbers written in base-ten notation, recognizing that the digits in each place represent amounts of hundreds, tens, or ones (e.g. 643 = 6 hundreds + 4 tens + 3 ones). Students will also begin comparing two 3-digit numbers using their understanding of place value.

Note: First compare concrete with base-ten blocks, which will connect to expanded notation. Transition to other options, such as the number line or place value charts.

Below are suggested Lesson Resources. Refer to the Survival Kit for additional ideas and resources. Lessons can be taught separately, combined, or out of sequence to meet the needs of your students.

Students should have opportunities to express their understanding of the place value of numbers, not just place naming (**MP3**, **MP6**). Recognizing and using patterns in the place value system support the development of numeric reasoning and is foundational for developing computational skills with larger numbers (**MP7**), as used with comparing numbers. Additionally when comparing, students make sense of quantities (**MP2**) and understanding the meaning of symbols (**MP6**).

Vocabulary	Suggested Lesson Resources		Manipulatives
base ten numerals number names expanded form digit compare hundreds tens ones greater than less than equal to order	**Chapter 10: Numbers to 1,000** 10-4 Place Value to 1,000 10-5 Read and Write Numbers to 1,000 10-6 Problem Solving Strategy: Choose a Strategy 10-7 Compare Numbers 10-8 Order Numbers **2nd Grade Worksheets: http://www.2ndgradeworksheets.net/mathccssworksheets.htm** Worksheets for NBT.3 and NBT.4 **K-5 Math Teaching Resources:** **http://www.k-5mathteachingresources.com/2nd-grade-number-activities.html** Worksheets for NBT.3 and NBT.4	**Illustrative Mathematics:** **https://www.illustrativemathematics.org/2** Tasks under 2.NBT.A.4 **MARS Tasks**: Carol's Numbers (2008) **Georgia Dept of Ed:** https://www.georgiastandards.org/Georgia-Standards/Frameworks/2nd-Math-Unit-1.pdf See Table of Content, Page 12-13 Any in this unit	Base-ten blocks Place value charts Place value mats Place value cards
Number Talks Topic Ideas	What's my value? - "I have 2 hundreds, 3 tens and 4 ones. What's my value?" (rearrange the place value for difficulty) What's more/less? – Draw/write two numbers side by side; ask students to compare by asking what is more/less and why.		Hundreds Chart
Key Dates			

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Week 9	Unit 4: Understanding Money			10/13 – 10/16 (4 days)
Operations and Algebraic Thinking	**Number and Operations in Base 10**	**Measurement and Data**	**Geometry**	**Math Practices**

OA.1[m]   Use addition and subtraction within (20) 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.
 	
OA.2[m] Fluently add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers.
	NBT.1[m] 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:
	  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).
	
	NBT.2[m] Count within 1000; skip count by *2s*, 5s, 10s, and 100s. *(CA: skip count by 2s)*
	
	NBT.3[m] Read and write numbers to 1000 using base-ten materials, number names, and expanded form.
	
	NBT.4[m] Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using <, = , and > symbols to record the results of comparisons.
				MP2 Reason abstractly and quantitatively.

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GRADE 2 MATH 2015-2016

In this unit, students will learn about the names and value of coins and bills. Coins include penny, nickel, dime, and quarter; bills include denominations up to 100 ($1, $5, $10, $20, $50, and $100). They will use their understanding of money to solve money problems in Unit 8. Students can do basic counting of coins and dollars in this unit.

Note: There is no standard for this concept in any grade. This is unit is to support 2.MD.8.

Below are suggested Lesson Resources. Refer to the Survival Kit for additional ideas and resources. Lessons can be taught separately, combined, or out of sequence to meet the needs of your students.

Students recognize money and understand its quantitative value (**MP2**).

Vocabulary	Suggested Lesson Resources		Manipulatives
Coin Penny Nickle Dime Quarter Bill Dollar(s) Value	**Grade 1 Text: Chapter 11** 11-1 Pennies and Nickels 11-2 Pennies and Dimes 11-3 Pennies, Nickels, and Dimes 11-4 Counting Money 11-7 Quarters **2nd Grade Worksheets:** **http://www.2ndgradeworksheets.net/mathccssworksheets.htm** Worksheets for MD.8	Identify Coins, Counting Coins/Bills, and Manipulatives: http://www.math-aids.com/Money/ Identify Coins: http://www.math-salamanders.com/kindergarten-money-worksheets.html Basic Coin Worksheets: http://www.kidslearningstation.com/money/ Money: http://prek-8.com/math/money.php Money, Money, Money: https://www.teacherspayteachers.com/FreeDownload/Money-Money-Money-1104421 (do not use pages with word problems, just the ones with identifying and counting. On 07/09/15, this is a TPT Free resource.)	Money
Number Talks **Topic Ideas**	Hundred Chart Pattern Puzzles: Teacher Share - http://www.pittsburg.k12.ca.us//site/Default.aspx?PageID=2090 Number of the Day		Hundreds Chart
Key Dates	Staff Development: 10/12 **Benchmark 1 ~ Units 1-3: 10/13 – 10/23**		

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Weeks 10-13	Unit 5: Adding and Subtracting within 100			10/19 – 11/13 (19 days)
Operations and Algebraic Thinking	**Number and Operations in Base 10**	**Measurement and Data**	**Geometry**	**Math Practices**

OA.1[m]   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.
 	
OA.2[m] ~~Fluently~~ add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers.
	NBT.1[m] 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:
	  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).
	
	NBT.2[m] Count within 1000; skip count by *2s*, 5s, 10s, ~~and 100s~~. *(CA: skip count by 2s)*
	
	NBT.3[m] Read and write numbers to 1000 using base-ten materials, number names, and expanded form.
	
	NBT.4[m] Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using <, = , and > symbols to record the results of comparisons.
	
	NBT.5[m] ~~Fluently~~ add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
				MP1 Make sense of problems and persevere in solving them.
				
				MP2 Reason abstractly and quantitatively.
				
				MP6 Attend to precision.
				
				MP7 Look for and make use of structure.
				
				MP8 Look for an express regularity in repeated reasoning.

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In this unit, students extend their understanding of the base-ten system by viewing 10 tens as a *hundred*. This lays the groundwork for understanding the structure of the base-ten system as based in repeated bundling in groups of 10. Strategies can include Base-ten Blocks, Number Bonds, Memorizing Facts, Arrow Method (https://www.youtube.com/watch?v=VuOWdxrTki8), and Number Line.

Note: Students are learning to add and subtract within 100, but need to be fluent by the end of the year. Students **DO NOT** need to add or subtract using the standard algorithm until 4th grade, however, it is ok to use a modified algorithm.

Below are suggested Lesson Resources. Refer to the Survival Kit for additional ideas and resources. Lessons can be taught separately, combined, or out of sequence to meet the needs of your students.

Students apply their understanding of the structure of the number system to refine addition strategies and develop subtraction strategies (**MP7**), notice repetitive actions in computing (**MP8**), make sense of quantities (**MP2**), and calculate accurately (**MP6**). Additionally, students will use and analyze multiple approaches to problem solving (**MP1**).

Vocabulary	Suggested Lesson Resources			Manipulatives
Add Subtract base ten place value properties relationship operations trade or exchange regroup sum difference	**Chapter 5: Two-Digit Addition** CCSS Foldable 3 5-1 Add Tens 5-2 Count on Tens and Ones 5-4 Regroup Ones as Tens 5-5 Add One-Digit Numbers and Two-Digit Numbers 5-6 Add Two-Digit Numbers **Chapter 6: Two-Digit Subtraction** CCSS Foldable 4 6-1 Subtract Tens 6-2 Count Back Tens and Ones 6-3 Regroup Tens as Ones 6-5 Subtract One-Digit Numbers from Two-Digit Numbers 6-6 Subtract Two-Digit Numbers 6-7 Check Subtraction **2nd Grade Worksheets:** http://www.2ndgradeworksheets.net/mathccssworksheets.htm Worksheets for NBT.5	**MARS Tasks: (some are pattern problems with addition)** Magic Pot (Practice) Marble Rows (2003) In One Minute (2006) Building Walls (2008) Desert Creatures (2011) Misha's Marbles (2011) **Georgia Dept of Ed**: https://www.georgiastandards.org/Georgia-Standards/Frameworks/2nd-Math-Unit-2.pdf See Table of Contents, Page 20-22 *Any task*, except those that include MD.8 (Story Problems, Sale Flyer Shopping, Grocery Store Math, Menu Math, and Planning a Field Trip)	Chopsticks (2003) Growing Necklaces (2005) Incredible Equations (2007) Mike's Magic Bean (2010) Striped Fish (2011) Can You Tell? (2014)	**Do not have to instruct on all sections below at this time, just use as resources now and imbed throughout the remainder of the year. Can be used in Unit 15 also:** **Chapter 3: Subtraction Strategies** CCSS1 Two-Step Word Problems – Pg. 1-6 **Chapter 5: Two-Digit Addition** 5-3 Problem Solving Strategy: Work Backwards **Chapter 6: Two-Digit Subtraction** 6-4 Problem Solving Strategy: Write a Number Sentence 6-8 Problem Solving Investigation: Choose a Strategy CCSS5 More Two-Step Word Problems – Pg. 25-30	Base 10 Blocks Two-color Counters Linking Color Cubes Ten Frames
Number Talks Topic Ideas	Rename that number (Ex: Given 27, ask students to explain different ways to say that number: 2 tens and 7 ones, 27 ones, 1 ten and 17 ones, 20 + 7, etc) Add one- and two-digit numbers (write out horizontally: 27 + 8)			
Key Dates	**END OF TRIMESTER INSTRUCTION: 11/13**			

- Newly introduced standards are in **bold print**
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- California Common Core Standards Booklet

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GRADE 2 MATH 2015-2016

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Trimester 2 Pacing Summary – 2nd Grade

Units 6 – 11

Weeks	Dates	# of Days	Units of Instruction
14	11/16 - 11/20	5	Unit 6: Relating Skip Counting to Mental Addition and Subtraction
15-17	11/30 – 12/18	15	Unit 7: Applying Strategies to Add/Subtract within 1000
18-20	01/04 – 01/22	14	Unit 8: Solving Problems involving Money
21-22	01/25 – 02/05	9	Unit 9: Skip Counting to Time **Benchmark 2 ~ Units 1-8: 02/01 – 02/11**
23-24	02/08 – 02/19	8	Unit 10: Developing Foundations of Multiplication through Exploring Even and Odd Numbers
25-26	02/22 - 03/04	10	Unit 11: Using Arrays to Foundations of Multiplication **End of Trimester 2 - 03/04**

Trimester 2 Standards

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.

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

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

NBT.7[m] Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties or 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, and ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

NBT.7.1[m]Use estimation strategies to make reasonable estimates in problem solving. (CA)

NBT.8[m] Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.

NBT.9[m] Explain why addition and subtraction strategies work, using the properties of operations. (Explanations may be supported by drawings or objects.)

MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. *Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year). (CA)*

MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Ex: If you have 2 dimes and 3 pennies, how many cents do you have?

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

Resources for Pacing Guide: Dana Center – University of Austin, Texas, Ca DOE Mathematics Framework, and Ca DOE CCSS Mathematics Standards Booklet

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Weeks 14	Unit 6: Skip Counting to Mental Addition and Subtraction			11/16 – 11/20 (5 days)
Operations and Algebraic Thinking	**Number and Operations in Base 10**	**Measurement and Data**	**Geometry**	**Math Practices**
OA.1[m] 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. OA.2[m] ~~Fluently~~ add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers.	NBT.1[m] 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: 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). NBT.2[m] Count within 1000; skip count by *2s*, 5s, 10s, **and 100s**. *(CA: skip count by 2s)* NBT.3[m] Read and write numbers to 1000 using base-ten materials, number names, and expanded form. NBT.4[m] Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using <, = , and > symbols to record the results of comparisons. NBT.5[m] ~~Fluently~~ add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. **NBT.8[m] Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.**			MP1 Make sense of problems and persevere in solving them. MP2 Reason abstractly and quantitatively. MP4 Model with mathematics MP5 Use appropriate tools strategically. MP8 Look for and express regularity in repeated reasoning.

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In this unit, students apply their skip counting skills to addition and subtraction situations. Skip counting and mentally adding 10s and 100s is an important skill that helps students to develop more sophisticated strategies, as well as efficiency and flexibility in computation. Strategies can include using a Hundreds Chart, Number Line, and Arrow Method.

Note: Students have been working on skip counting by 1s and 10s since kindergarten and extending this practice since the beginning of the year.

Below are suggested Lesson Resources. Refer to the Survival Kit for additional ideas and resources. Lessons can be taught separately, combined, or out of sequence to meet the needs of your students.

Students make sense of quantities and their relationships to coin and dollar values (**MP2**) and represent problem situations with drawings and coins and bills (**MP4**). Students can use tools, such as play money (**MP5**). Students notice patterns in the numbers which skip counting and apply this to adding nickels, dimes, quarters (**MP7**). Students use precision by using symbols and vocabulary accurately (**MP6**).

Vocabulary	Suggested Lesson Resources		Manipulatives
Mentally Add, Sum Subtract, Difference Number line Skip count	**Chapter 13: Three-Digit Addition** CCSS25 Mentally Add 10 or 100 (Pg 145 – 150) **Chapter 14: Three-Digit Subtraction** CCSS26 Mentally Subtract 10 or 100 (Pg 151 – 156) **K-5 Math Teaching Resources:** **http://www.k-5mathteachingresources.com/2nd-grade-number-activities.html** +10 Skip Counting Paths Add and Subtract 100 on the Number Line Race Around (+10) Ver.1 Race Around (+10) Ver.2 Race Around (-10) Ver.1 Race Around (-10) Ver.2	**Team Umizoomi** (Mini 30 second video clip) Count by 10: http://www.digitalpodcast.com/items/8312390 **Common Core Sheets** http://commoncoresheets.com/SortedByGrade.php?Sorted=2nbt8 **2nd Grade Worksheets:** **http://www.2ndgradeworksheets.net/mathccssworksheets.htm** Worksheets for NBT.8 **Illustrative Mathematics: https://www.illustrativemathematics.org/2** NBT.8 Choral Counting	
Number Talks Topic Ideas	Hundreds Chart Patterns (±1 and ±10).		Hundreds Chart, Pattern Puzzles
Key Dates	Holiday: Thanksgiving Break – 11/23 - 11/27		

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Weeks 15-17	Unit 7: Applying Strategies to Add and Subtract within 1000			11/30 – 12/18 (15 days)
Operations and Algebraic Thinking	**Number and Operations in Base 10**	**Measurement and Data**	**Geometry**	**Math Practices**
OA.1[m] 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.

OA.2[m] ~~Fluently~~ add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers. | NBT.1[m] 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:
 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).

NBT.2[m] Count within 1000; skip count by *2s*, 5s, 10s, and 100s. *(CA: skip count by 2s)*

NBT.3[m] Read and write numbers to 1000 using base-ten materials, number names, and expanded form.

NBT.4[m] Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using <, = , and > symbols to record the results of comparisons.

NBT.5[m] ~~Fluently~~ add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

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

NBT.7[m] Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties or 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, and ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

NBT.7.1[m]Use estimation strategies to make reasonable estimates in problem solving. (CA)

NBT.8[m] Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.

 NBT.9[m] Explain why addition and subtraction strategies work, using the properties of operations. (Explanations may be supported by drawings or objects.) | | | MP1 Make sense of problems and persevere in solving them.

MP2 Reason abstractly and quantitatively.

MP4 Modeling with mathematics.

MP5 Use appropriate tools strategically.

MP6 Attend to precision.

MP8 Look for and express regularity in repeated reasoning. |

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In this unit, students apply computational strategies they have been developing in earlier units to make sense of calculations with numbers up to 1000. They generalize their understanding of addition and subtraction using concrete models or drawings and applying decomposition strategies. Use same resources as Units 5 and 6.

Note: NBT.7.1 is a CA addition standard and will not be assessed on a benchmark.
Below are suggested Lesson Resources. Refer to the Survival Kit for additional ideas and resources. Lessons can be taught separately, combined, or out of sequence to meet the needs of your students.

Students apply their understanding of the structure of the number system to refine addition strategies and develop subtraction strategies (**MP7**), notice repetitive actions in computing (**MP8**), make sense of quantities (**MP2**), and calculate accurately (**MP6**). Additionally, students will use and analyze multiple approaches to problem solving (**MP1, MP4**).

Vocabulary	Suggested Lesson Resources		Manipulatives
Strategies Two-digit/digit Properties of operations Ones Tens Hundreds Sum Add Difference Subtract Place value Fact families Explain Exchange/trade Regroup	**Chapter 5: Two-Digit Addition** CCSS4 Add Three and Four Two-Digit Numbers **Chapter 13: Three-Digit Addition** CCSS Foldable 11 13-1 Add Hundreds 13-2 Regroup Ones 13-3 Regroup Tens 13-5 Estimate Sums **Chapter 14: Three-Digit Subtraction** CCSS Foldable 12 14-1 Subtract Hundreds 14-2 Regroup Tens 14-3 Regroup Hundreds 14-5 Estimate Differences **K-5 Math Teaching Resources:** **http://www.k-5mathteachingresources.com/2nd-grade-number-activities.html** See all activities under NBT.6, NBT.7, and NBT.9 Base-Ten Bag activity – use hundreds also	**Common Core Sheets** (NBT.6) http://www.commoncoresheets.com/SortedByGrade.php?Sorted=2nbt6 (NBT.7) http://www.commoncoresheets.com/SortedByGrade.php?Sorted=2nbt7 (NBT.9) http://www.commoncoresheets.com/SortedByGrade.php?Sorted=2nbt9 **2nd Grade Worksheets: http://www.2ndgradeworksheets.net/mathccssworksheets.htm** Worksheets for NBT.6, NBT.7, and NBT.9 **Illustrative Mathematics:** https://www.illustrativemathematics.org/2 (NBT.6) Toll Bridge (NBT.7) How Many Days Until Summer Vacation? (NBT.7) How Many Ways to Addition 2 **MARS Tasks** Peanuts and Ducks (2003) Can You Tell (2014) Apple Farm Field Trip (2009) Classroom Library (2015) Desert Creatures (2012) Reading Journals (2015) Who Has More? (2013) **Georgia Dept of Ed:** https://www.georgiastandards.org/Common-Core/Common%20Core%20Frameworks/CCGPS_Math_2_Unit4Framework.pdf Any of the tasks	Base 10 Blocks Place Value Mats
Number Talks Topic Ideas	Addition Strategies – ones or tens (3-4 addends) or Two-digit (2 addends)		
Key Dates	Holiday: Winter Break: 12/21 – 01/01		

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Weeks 18-20	Unit 8: Solving Problems Involving Money			01/04 – 01/22 (14 days)
Operations and Algebraic Thinking	**Number and Operations in Base 10**	**Measurement and Data**	**Geometry**	**Math Practices**

OA.1[m]   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.
 	
OA.2[m] ~~Fluently~~ add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers.
	NBT.1[m] 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:
	  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).
	
	NBT.2[m] Count within 1000; skip count by *2s*, 5s, 10s, and 100s. *(CA: skip count by 2s)*
	
	NBT.3[m] Read and write numbers to 1000 using base-ten materials, number names, and expanded form.
	
	NBT.4[m] Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using <, = , and > symbols to record the results of comparisons.
	
	NBT.5[m] ~~Fluently~~ add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
	
	NBT.6[m] Add up to four two-digit numbers using strategies based on place value and properties operations.
	
	NBT.7[m] Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties or 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, and ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
	
	NBT.7.1[m]Use estimation strategies to make reasonable estimates in problem solving. (CA)
	
	NBT.8[m] Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.
	
	NBT.9[m] Explain why addition and subtraction strategies work, using the properties of operations. (Explanations may be supported by drawings or objects.)
		MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Ex: If you have 2 dimes and 3 pennies, how many cents do you have?		MP1 Make sense of problems and persevere in solving them.
				
				MP2 Reason abstractly and quantitatively.
				
				MP4 Model with mathematics
				
				MP5 Use appropriate tools strategically.
				
				MP8 Look for and express regularity in repeated reasoning.

- Newly introduced standards are in **bold print**
- Standards with ~~strikethroughs~~ are not taught yet
- California Common Core Standards Booklet

In this unit, students solve real-world problems, working with coins or dollar bills in whole number amounts. Students are to write values using monetary symbols (\$ and ¢), using no decimals, which is not addressed until Grade 4. Introduce counting money, if students did not in Unit 4.

Note: Students are only solving problems by combining cents with cents or dollars with dollars. Students will not solve problems by combining dollars with cents. Therefore, students will not need to write values with a decimal (EX: students write 25 cents as 25¢, not \$0.25).

Below are suggested Lesson Resources. Refer to the Survival Kit for additional ideas and resources. Lessons can be taught separately, combined, or out of sequence to meet the needs of your students.

Students make sense of quantities and their relationships to coin and dollar values (**MP2**) and represent problem situations with drawings and coins and bills (**MP4**). Students can use tools, such as play money (**MP5**). Students notice patterns in the numbers which skip counting and apply this to adding nickels, dimes, quarters (**MP7**). Students use precision by using symbols and vocabulary accurately (**MP6**).

Vocabulary	Suggested Lesson Resources		Manipulatives
Cents Penny, nickel, dime, quarter dollar heads, tails symbols: \$, ¢	**Chapter 7: Money** CCSS Foldable 5 7-1: Pennies, Nickels and Dimes 7-2: Quarters ~~and Half Dollars~~ 7-3: Count Coins (No Half Dollar problems) 7-4: Act it Out 7-10: Choose a Strategy (skip #1, #2 edit \$0.15 to 15¢) **Counting Bills Only** ***Textbook 7-5 to 7-7 is not recommended, as values have decimals and counts bills and cents together. Use Math-Aids website, such as** http://www.math-aids.com/Money/Counting_Bills_US.html **http://www.k-5mathteachingresources.com/2nd-grade-measurement-and-data.html** MD.8 Coin Counting Cup MD.8 Coin Barrier Game MD.8 Make One Dollar MD.8 Money Word Problems **Common Core Sheets** http://commoncoresheets.com/SortedByGrade.php?Sorted=2md8 **2nd Grade Worksheets: http://www.2ndgradeworksheets.net/mathccssworksheets.htm** Worksheets for MD.8	**Team Umizoomi** (Mini 1 minute video clips) Count by 5: http://www.nickjr.com/team-umizoomi/videos/team-umizoomi-count-by-fives/ Count by 10: http://www.digitalpodcast.com/items/8312390 **Math-Aids** http://www.math-aids.com/Money/ **Illustrative Mathematics: www.illustrativemathematics.org** 2.OA, MD Delayed Gratification MD.8 Alexander, Who Used to be Rich Last Sunday MD.8 Choices, Choices, Choices MD,8 Jamir's Penny Jar MD.8 Pet Shop MD.8 Susan's Choice MD.8 Visiting the Arcade NBT.8 Saving Money 1 **MARS Tasks** Collecting Cans (Practice)　　Pocket Money (2008) Pencils and Erasers (2005)　　Fruit 4 Health (2011; skip #6) **Georgia Dept of Ed**: https://www.georgiastandards.org/Georgia-Standards/Frameworks/2nd-Math-Unit-2.pdf See Table of Contents, Page 20-22 Story Problems　　Sale Flyer Shopping Grocery Store Math　　Menu Math Planning a Field Trip	Play money
Number Talks Topic Ideas	How can I make _____? (Ex: 25¢ = 25 pennies, or 1 quarter, or 2 dimes and 1 nickel, etc.; \$10 = 1 ten dollar bill, or 10 ones, or 2 five dollar bills).		
Key Dates	Holiday: 1/18 - Martin Luther King, Jr. Birthday		

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Weeks 21-22	Unit 9: Skip Counting to Time		01/25 – 02/05 (9 days)
Operations and Algebraic Thinking	**Number and Operations in Base 10**	**Measurement and Data**	**Geometry**	**Math Practices**

Operations and Algebraic Thinking	Number and Operations in Base 10	Measurement and Data	Geometry	Math Practices

OA.1[m] 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.
 	
OA.2[m] ~~Fluently~~ add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers.
	NBT.1[m] 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:
	  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).
	
	NBT.2[m] Count within 1000; skip count by *2s*, 5s, 10s, and 100s. *(CA: skip count by 2s)*
	
	NBT.3[m] Read and write numbers to 1000 using base-ten materials, number names, and expanded form.
	
	NBT.4[m] Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using <, = , and > symbols to record the results of comparisons.
	
	NBT.5[m] ~~Fluently~~ add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
	
	NBT.6[m] Add up to four two-digit numbers using strategies based on place value and properties operations.
	
	NBT.7[m] Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties or 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, and ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
	
	NBT.7.1[m]Use estimation strategies to make reasonable estimates in problem solving. (CA)
	
	NBT.8[m] Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.
	
	 NBT.9[m] Explain why addition and subtraction strategies work, using the properties of operations. (Explanations may be supported by drawings or objects.)
		MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. *Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year). (CA)*
		
		MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Ex: If you have 2 dimes and 3 pennies, how many cents do you have?
				MP5 Use appropriate tools strategically.
				
				MP6 Attend to precision.
				
				MP7 Look for and make use of structure.

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In this unit, skip counting by 5s and 10s is used to support telling and writing time to the nearest five minutes.

Note: MD.7 specifically has students working on <u>telling</u> and <u>writing</u> time. There is no Grade 2 standard of students solving word problems with time, which is a standard in Grade 3. Therefore, students do not need to problem solving with time besides putting these problems on board math or students doing a problem of the day. After this unit, students can continue to practice time in daily routines. Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year) is a CA added standard and will not be assessed on a district assessment.

Below are suggested Lesson Resources. Refer to the Survival Kit for additional ideas and resources. Lessons can be taught separately, combined, or out of sequence to meet the needs of your students.

Students can use tools, such as a student clock (**MP5**). Students notice patterns in the numbers which skip counting and apply this to telling time (**MP7**). Students use precision to read the clock accurately and communicate their understanding by using appropriate vocabulary, such as o' clock, a.m. and p.m. (**MP6**).

Vocabulary	Suggested Lesson Resources		Manipulatives
Analog, Digital Nearest Minutes a.m., p.m. Hour Month, Year Time Hour/minute/second hand O'clock Half Past Quarter/half hour	**Chapter 12: Measurement and Time** (Below sections address CA addition) CCSS Foldable 9 CCSS22 Time to the Hour (Pg 127-132) CCSS23 Time to the Half Hour (Pg 133 - 138) 12-5 Time to the Quarter Hour CCSS24 Select and Use Metric Tools (Pg 139-144) **K-5 Math Teaching Resources:** **http://www.k-5mathteachingresources.com/2nd-grade-measurement-and-data.html** Time Barrier Game Time Barrier Game Grid One Hour Earlier, One Hour Later **Common Core Sheets** http://commoncoresheets.com/SortedByGrade.php?Sorted=2md7 **2nd Grade Worksheets:** **http://www.2ndgradeworksheets.net/mathccssworksheets.htm** Worksheets for MD.7	**Team Umizoomi** (Mini 1 minute video clips) Count by 5: http://www.nickjr.com/team-umizoomi/videos/team-umizoomi-count-by-fives/ Count by 10: http://www.digitalpodcast.com/items/8312390 **Math-Aids** http://www.math-aids.com/Time/ **GA Dept of Ed: https://www.georgiastandards.org/Georgia-Standards/Frameworks/2nd-Math-Unit-3.pdf** See Table of Contents, Page 14-15 Number Line Clock Missed Bedtime	Student Clocks
Number Talks Topic Ideas	Continue to add a one-digit or two-digit numbers with a one-digit.		
Key Dates	Staff Development Day: 01/29 **Benchmark 2 ~ Units 1-8: 02/01 – 02/11**		

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Weeks 23-24	Unit 10: Developing Foundations of Multiplication through Exploring Even and Odd Numbers			02/08 – 02/19 (8 days)
Operations and Algebraic Thinking	**Number and Operations in Base 10**	**Measurement and Data**	**Geometry**	**Math Practices**
OA.1[m] 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. OA.2[m] ~~Fluently~~ add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers. **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.**	NBT.1[m] 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: 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). NBT.2[m] Count within 1000; skip count by *2s*, 5s, 10s, and 100s. *(CA: skip count by 2s)* NBT.3[m] Read and write numbers to 1000 using base-ten materials, number names, and expanded form. NBT.4[m] Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using <, = , and > symbols to record the results of comparisons. NBT.5[m] ~~Fluently~~ add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. NBT.6[m] Add up to four two-digit numbers using strategies based on place value and properties operations. NBT.7[m] Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties or 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, and ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds. *NBT.7.1[m]Use estimation strategies to make reasonable estimates in problem solving. (CA)* NBT.8[m] Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900. NBT.9[m] Explain why addition and subtraction strategies work, using the properties of operations. (Explanations may be supported by drawings or objects.)	MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. *Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year). (CA)* MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Ex: If you have 2 dimes and 3 pennies, how many cents do you have?		MP2 Reason abstractly and quantitatively. MP3 Construct viable arguments and critique the reasoning of others. MP5 Use appropriate tools strategically. MP7 Look for and make use of structure. MP8 Look for and express regularity in repeated reasoning.

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In this unit, students explore the structure of equal groups using odd and even numbers. This supports doubling strategies for addition and subtraction fluency to 20, and helps set the stage for introduction to multiplication and division in Grade 3. Distinguishing between odd and even seems like a simple straight-forward skill, but it is being used in this unit to build a strong foundational base for conceptual understanding of equal groups and the sophisticated strategy of using doubles ±*n.*

Note: The main purpose of this standard is to not memorize even numbers end in 0, 2, 4, 6, 8 and odd numbers end in 1, 3, 5, 7, 9. While students can explore and identify this pattern, the main purpose is to understand what makes an even number even (Doubles, 2 equal groups, 2 + 2 + … + 2, etc) and what makes an odd number odd (Doubles plus 1, 2 equal groups and 1 more, 2 + 2 + … + 2 + 1). Identify even or odd up to 20. Only extend if students are ready.

Below are suggested Lesson Resources. Refer to the Survival Kit for additional ideas and resources. Lessons can be taught separately, combined, or out of sequence to meet the needs of your students.

Students can create a model with counting objects, look for patterns in the representations (equal groups, skip counting, doubles, doubles plus one, etc), and write equations to express even and odd numbers (**MP2, MP5, MP7, MP8**). Students may construct a viable argument when explaining why a number is even or odd (**MP3**).

Vocabulary	Suggested Lesson Resources		Manipulatives
Odd Even Equal Groups Addend Equation Sum Double Remaining Pair	**Chapter 8: Multiplication and Division Concepts** CCSS9 Even and Odd Numbers CCSS10 Sums of Equal Numbers **K-5 Math Teaching Resources:** **http://www.k-5mathteachingresources.com/2nd-grade-number-activities.html** Even Odd Grab Even Odd Song **Math Read:** Odd and Even Read-Alouds **Common Core Sheets** http://www.commoncoresheets.com/SortedByGrade.php?Sorted=2oa3 **2nd Grade Worksheets:** **http://www.2ndgradeworksheets.net/mathccssworksheets.htm** Worksheets for OA.3	**Illustrative Mathematics:** https://www.illustrativemathematics.org/2 (OA.3) Red and Blue Tiles (OA.3) Buttons Odd and Even **MARS Tasks** Even and Odd (2014) **Georgia Dept of Ed:** https://www.georgiastandards.org/Common-Core/Common%20Core%20Frameworks/CCGPS_Math_2_Unit6Framework.pdf Bumpy or Not Bumpy? Are We Odd or Even? What's in the Bag? Two of Everything! Add it Up! Seating the Class	Two-sided counters Linking Cubes Counting objects
Number Talks Topic Ideas	Even and Odd: Doubles/Doubles plus 1		
Key Dates	Holiday: President's Day: 02/12 – 02/15		

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Weeks 25-26	Unit 11: Using Arrays for Foundations of Multiplication			02/22 – 03/04 (10 days)
Operations and Algebraic Thinking	**Number and Operations in Base 10**	**Measurement and Data**	**Geometry**	**Math Practices**

OA.1[m] 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.
 	
OA.2[m] ~~Fluently~~ add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers.
 	
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.
 	
OA.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and 5 columns; write an equation to express the total as a sum of equal addends.
	NBT.1[m] 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:
	  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).
	
	NBT.2[m] Count within 1000; skip count by *2s*, 5s, 10s, and 100s. *(CA: skip count by 2s)*
	
	NBT.3[m] Read and write numbers to 1000 using base-ten materials, number names, and expanded form.
	
	NBT.4[m] Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using <, = , and > symbols to record the results of comparisons.
	
	NBT.5[m] ~~Fluently~~ add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
	
	NBT.6[m] Add up to four two-digit numbers using strategies based on place value and properties operations.
	
	NBT.7[m] Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties or 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, and ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
	
	NBT.7.1[m]Use estimation strategies to make reasonable estimates in problem solving. (CA)
	
	NBT.8[m] Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.
	
	 NBT.9[m] Explain why addition and subtraction strategies work, using the properties of operations. (Explanations may be supported by drawings or objects.)
		MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. *Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year). (CA)*
		
		MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Ex: If you have 2 dimes and 3 pennies, how many cents do you have?
			G.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	MP2 Reason abstractly and quantitatively.
				
				MP3 Construct viable arguments and critique the reasoning of others.
				
				MP5 Use appropriate tools strategically.
				
				MP6 Attend to precision.
				
				MP7 Look for and make use of structure.
				
				MP8 Look for and express regularity in repeated reasoning.

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In this unit, students start this unit by arranging objects in arrays to develop the concept of equal groups. Then the progress toward partitioning a rectangle into rows and columns of same-size squares, which is an ideal context to support development of both arithmetical and spatial structuring foundations for later work with area in Grade 3.

Note: In demonstrating OA.4, students represent additive thinking by using skip-counting or repeated addition to find and represent the total number of objects. The concept of multiplication will be addressed in Grade 3. Therefore, students do not need to learn the multiplication symbol (x).

Below are suggested Lesson Resources. Refer to the Survival Kit for additional ideas and resources. Lessons can be taught separately, combined, or out of sequence to meet the needs of your students.

Students can make arrays and find area using a variety of square shaped manipulatives or counters to understand the meaning of area, repeated addition, and equal groups (**MP2**, **MP5**). Students will see patterns in the arrays to write equations using repeated addition (**MP7, MP8**). Students will attend to precision with counting, creating arrays, writing equations and finding sums, and use of academic language (**MP6**).

Vocabulary	Suggested Lesson Resources		Manipulatives
Addend Equal Rectangular array Row Column Sum	**Chapter 8: Multiplication and Division Concepts** CCSS Foldable 6 CCSS7 Repeated Addition CCSS8 Repeated Addition with Arrays **Chapter 11: Geometry** CCSS13 Area **K-5 Math Teaching Resources:** **http://www.k-5mathteachingresources.com/2nd-grade-number-activities.html** (OA.4) Making Arrays (note: building an array of 24 is not within standard) (OA.4) Building Arrays (OA.4) Making Different Sized Squares **http://www.k-5mathteachingresources.com/2nd-grade-geometry.html** (G.2) Fill a Rectangle (G.2) Making Rectangles **Common Core Sheets** (OA.4) http://www.commoncoresheets.com/SortedByGrade.php?Sorted=2oa4 (G.2) http://www.commoncoresheets.com/SortedByGrade.php?Sorted=2g2 **Common Core Sheets** http://commoncoresheets.com/SortedByGrade.php?Sorted=2md7 **2nd Grade Worksheets:** **http://www.2ndgradeworksheets.net/mathccssworksheets.htm** Worksheets for OA.4 and G.2	**Illustrative Mathematics:** https://www.illustrativemathematics.org/2 (OA.4) Counting Dots in Arrays **MARS Tasks** Maria's Fruit Stand (2011) Our Gardens (2014) **Georgia Dept of Ed:** https://www.georgiastandards.org/Common-Core/Common%20Core%20Frameworks/CCGPS_Math_2_Unit6Framework.pdf Drink up (Challenge: array is 12x6, so above standard of 5x5) Ten! Cookie Monster Cereal Arrays Roll an Array Pattern Block Drop The Queen's Dilemma Mathemagicians No, You Can't The Candy Box Staples	Two-sided counters Linking Cubes Counting objects Tile squares: pattern block squares, Cheez-its, Starburst, Wheat Thins
Number Talks Topic Ideas	Dot Cards: Arrays		
Key Dates			

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Trimester 3 Pacing Summary – 2nd Grade

Units 12 – 17

Weeks	Dates	# of Days	Units of Instruction
27-29	03/07 - 03/23	13	Unit 12: Exploring Standard Units of Length
30-31	04/04 – 04/15	10	Unit 13: Relating Addition and Subtraction to Length **Benchmark 3 ~ Units 1-12: 04/04 – 04/15**
32-33	04/18 – 04/29	10	Unit 14: Generating and Representing Measurement Data to Solve Problems
34-35	05/02 – 05/13	10	Unit 15: Estimating and Comparing Lengths
36-37	05/16 – 05/27	10	Unit 16: Reasoning with Shapes and Their Attributes **Benchmark 4 ~ Units 1-15: 05/16 – 05/27**
38	05/31 – 06/03	4	Unit 17: Demonstrate Fluency in Addition and Subtraction* **End of Trimester 3 - 06/08**

Trimester 3 Standards

OA.2[m] Fluently add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers.

NBT.5[m] Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

MD.1[m] Measure the length of an object by selecting and using appropriate tools such as rules, yardsticks, meter sticks, and measuring tapes.

MD.2[m] Measure the length of an object twice, using length units for the two measurements; describe how the two measurements relate to the size of the unit chosen.

MD.3[m] Estimate lengths using units of inches, feet, centimeters, and meters.

MD.4[m] Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

MD.5[m] 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.

MD.6[m] 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.

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 in whole-number units.

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

G.1 Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of faces. (Sizes are compared directly or visually, not compared by measuring.) Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.

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 whole need not have the same shape.

Resources for Pacing Guide: Dana Center – University of Austin, Texas, Ca DOE Mathematics Framework, and Ca DOE CCSS Mathematics Standards Booklet

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Weeks 27-29	Unit 12: Exploring Standard Units of Length		03/07 – 03/23 (13 days)
Operations and Algebraic Thinking	**Number and Operations in Base 10**	**Measurement and Data**	**Geometry**	**Math Practices**

Operations and Algebraic Thinking	Number and Operations in Base 10	Measurement and Data	Geometry	Math Practices
OA.1[m] 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. OA.2[m] ~~Fluently~~ add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers. 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. OA.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and 5 columns; write an equation to express the total as a sum of equal addends.	NBT.1[m] 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: 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). NBT.2[m] Count within 1000; skip count by *2s*, 5s, 10s, and 100s. *(CA: skip count by 2s)* NBT.3[m] Read and write numbers to 1000 using base-ten materials, number names, and expanded form. NBT.4[m] Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using <, = , and > symbols to record the results of comparisons. NBT.5[m] ~~Fluently~~ add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. NBT.6[m] Add up to four two-digit numbers using strategies based on place value and properties operations. NBT.7[m] Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties or 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, and ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds. *NBT.7.1[m]Use estimation strategies to make reasonable estimates in problem solving. (CA)* NBT.8[m] Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900. NBT.9[m] Explain why addition and subtraction strategies work, using the properties of operations. (Explanations may be supported by drawings or objects.)	**MD.1[m] Measure the length of an object by selecting and using appropriate tools such as rules, yardsticks, meter sticks, and measuring tapes.** **MD.2[m] Measure the length of an object twice, using length units for the two measurements; describe how the two measurements relate to the size of the unit chosen.** MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. *Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year). (CA)* MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Ex: If you have 2 dimes and 3 pennies, how many cents do you have?	G.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	MP2 Reason abstractly and quantitatively. MP3 Construct viable arguments and critique the reasoning of others. MP5 Use appropriate tools strategically. MP6 Attend to precision. MP7 Look for and make use of structure.

- Newly introduced standards are in **bold print**
- Standards with ~~strikethroughs~~ are not taught yet
- California Common Core Standards Booklet

GRADE 2 MATH 2015-2016

In this unit, students apply their understanding of measuring with non-standard units to develop proficiency in measuring length with both customary and metric units of measure (inches, feet, centimeters, and meters). Students understanding of measurement will be extended and applied in Units 5, 9, and 14.

Note: Selecting and using tools to measure standard units is new for students in grade2. This unit focuses on measuring, not estimating or solving problems. Estimating will come in Unit 14 and Problem Solving will come in Unit 5.

Below are suggested Lesson Resources. Refer to the Survival Kit for additional ideas and resources. Lessons can be taught separately, combined, or out of sequence to meet the needs of your students.

Students become familiar with available tools to measure (**MP5**) and use precision to read tools accurately (**MP6**). Measurement problems also support mathematical practices such as reasoning quantitatively (**MP2**), justifying conclusions (**MP3**), and making use of structure or patterns (**MP7**).

Vocabulary	Suggested Lesson Resources		Manipulatives
Ruler/yardstick/meter stick/ measuring tape Measure Standard units, unit Inch(es), foot, feet, yard Centimeter, meter Length, width About Relate	**Chapter 12: Measurement and Time** (Use Enrich for CCSS 14 and CCSS17 in Unit 5) CCSS14 Select and Use Customary Tools (Pg 79-81, 83-84, skip 6,7) CCSS16 Relate Inches, Feet, and Yards (Pg 91-93, 95) CCSS17 Select and Use Metric Tools (Pg 97 – 99, 101) CCSS19 Relate Centimeters and Meters (Pg 109-111, 113-114, skip 6,7) **Common Core Sheets** (MD.1) http://commoncoresheets.com/SortedByGrade.php?Sorted=2md1 (MD.2) http://commoncoresheets.com/SortedByGrade.php?Sorted=2md2 **2nd Grade Worksheets:** **http://www.2ndgradeworksheets.net/mathccssworksheets.htm** Worksheets for MD.1 and MD.2 **Math-Aids** http://www.math-aids.com/Measurement/ **2ⁿᵈ Grade Worksheets** (MD.1) http://www.2ndgradeworksheets.net/ccss2MD1.htm (MD.2) http://www.2ndgradeworksheets.net/ccss2MD2.htm	**Team Umizoomi** (Mini 1 minute video clips) Measurement: http://www.nickjr.com/team-umizoomi-videos/team-umizoomi-measurement/ Meatball Madness: http://www.nickjr.com/team-umizoomi/videos/umizoomi-meatball-madness/ Milli's Raft: http://www.nickjr.com/team-umizoomi/videos/math-team-umizoomi-millis-raft/ **http://www.k-5mathteachingresources.com/2nd-grade-measurement-and-data.html** (MD.1) Measuring Strips (MD.1) Measuring Paths Path 1 Path 2 Path 3 (MD.1) Measuring Cuisenaire Rods (MD.1) Measuring with a Meter Stick (MD.2) Measurement with Two Units **Illustrative Mathematics: www.illustrativemathematics.org** MD.1 How Big is a Foot? MD.1 Determining Length **Georgia Dept of Ed: https://www.georgiastandards.org/Georgia-Standards/Frameworks/2nd-Math-Unit-3.pdf** See Table of Contents, Page 14-15 Make Your Own Ruler Footprints on the Rug		Measurement tools: ruler, yardstick, meter stick, measuring tape, paper clips, Linking Color Cubes
Number Talks Topic Ideas	Add one- and two-digit numbers (write out horizontally: 27 + 8)		
Key Dates	Spring Break: 03/24 – 04/01		

- Newly introduced standards are in **bold print**
- Standards with ~~strikethroughs~~ are not taught yet
- California Common Core Standards Booklet

GRADE 2 MATH 2015-2016

Weeks 30-31	Unit 13: Relating Addition and Subtraction to Length			04/04 – 04/15 (10 days)
Operations and Algebraic Thinking	**Number and Operations in Base 10**	**Measurement and Data**	**Geometry**	**Math Practices**

OA.1[m] 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.
 	
OA.2[m] ~~Fluently~~ add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers.
 	
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.
 	
OA.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and 5 columns; write an equation to express the total as a sum of equal addends.
	NBT.1[m] 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:
	  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).
	
	NBT.2[m] Count within 1000; skip count by *2s*, 5s, 10s, and 100s. *(CA: skip count by 2s)*
	
	NBT.3[m] Read and write numbers to 1000 using base-ten materials, number names, and expanded form.
	
	NBT.4[m] Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using <, = , and > symbols to record the results of comparisons.
	
	NBT.5[m] ~~Fluently~~ add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
	
	NBT.6[m] Add up to four two-digit numbers using strategies based on place value and properties operations.
	
	NBT.7[m] Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties or 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, and ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
	
	NBT.7.1[m]Use estimation strategies to make reasonable estimates in problem solving. (CA)
	
	NBT.8[m] Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.
	
	NBT.9[m] Explain why addition and subtraction strategies work, using the properties of operations. (Explanations may be supported by drawings or objects.)
		MD.1[m] Measure the length of an object by selecting and using appropriate tools such as rules, yardsticks, meter sticks, and measuring tapes.
		
		MD.2[m] Measure the length of an object twice, using length units for the two measurements; describe how the two measurements relate to the size of the unit chosen.
		
		MD.5[m] 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.
		
		MD.6[m] 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.
		
		MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. *Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year). (CA)*
		
		MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Ex: If you have 2 dimes and 3 pennies, how many cents do you have?
			G.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	MP1 Make sense of problems and persevere in solving them.
				
				MP2 Reason abstractly and quantitatively.
				
				MP3 Construct viable arguments and critique the reasoning of others.
				
				MP4 Model with mathematics
				
				MP5 Use appropriate tools strategically.
				
				MP6 Attend to precision.
				
				MP7 Look for and make use of structure.
				
				MP8 Look for and express regularity in repeated reasoning.

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In this unit, students extend their understanding of measurement and addition and subtraction using the number line to apply the use of number lines as a tool to solve addition and subtraction problems involving length. Students will also extend their understanding of measurement to solve addition and subtraction measurement problems.

Note: MD.5 connects to OA.1, so students will be practicing both standards during this unit.

Below are suggested Lesson Resources. Refer to the Survival Kit for additional ideas and resources. Lessons can be taught separately, combined, or out of sequence to meet the needs of your students.

Students continue to use available tools to measure and represent lengths on a number line (**MP5**). Students use precision to read tools and label number lines accurately (**MP6**). Students will solve measurement word problems (**MP4**), which support mathematical practices such as making sense of the problem (**MP1**), reasoning quantitatively (**MP2**), justifying conclusions (**MP3**), making use of structure or patterns to develop computational strategies (**MP7**), and looking for repeated reasoning (**MP8**).

Vocabulary	Suggested Lesson Resources		Manipulatives
Ruler/yardstick/meter stick/measuring tape Measure Standard units, unit Inch(es), foot, feet, yard Centimeter, meter Length, width About Relate Symbol, add, sum, subtract, difference Equation Unknown Number line, points	**Chapter 12: Measurement and Time** CCSS14 Select and Use Customary Tools (Pg 82, Enrich) CCSS16 Relate Inches, Feet, and Yards (Pg 94, 96) CCSS17 Select and Use Metric Tools (Pg 100, 102, Enrich) CCSS19 Relate Centimeters and Meters (Pg 112) CCSS20 Measure on a Number Line (Pg 115 – 120) **http://www.k-5mathteachingresources.com/2nd-grade-measurement-and-data.html** (MD.5) Linear Measurement Word Problems (MD.5) More Length Word Problems **Common Core Sheets** (MD.6) http://commoncoresheets.com/SortedByGrade.php?Sorted=2md6 **Common Core Sheets** http://commoncoresheets.com/SortedByGrade.php?Sorted=2md7 **2nd Grade Worksheets:** **http://www.2ndgradeworksheets.net/mathccssworksheets.htm** Worksheets for MD.5 and MD.6	**Team Umizoomi** (Mini 1 minute video clips) Number line: http://www.nickjr.com/team-umizoomi/videos/team-umizoomi-number-line/ **NCTM Iluminations** (MD.6) Where Will I Land? http://illuminations.nctm.org/Lesson.aspx?id=683 (MD.6) Hopping Backwards to Solve Problems http://illuminations.nctm.org/Lesson.aspx?id=437 **Illustrative Mathematics: www.illustrativemathematics.org** MD.5 High Jump Competition MD.6 Frog and Toad on the number line **MARS Tasks** Footsteps On the Rug (2004) Old Measurements (2011) The Track Team (2006) Across the Bridge (2013) High Horse (2009) We Have Grown! (2015) **Georgia Dept of Ed: https://www.georgiastandards.org/Georgia-Standards/Frameworks/2nd-Math-Unit-3.pdf** See Table of Contents, Page 14-15 Solving Problems on a Number Line	Measurement tools: ruler, yardstick, meter stick, measuring tape, paper clips, Linking Color Cubes
Number Talks Topic Ideas	Continue to add one- and two-digit numbers. Focus on addition/subtraction using a number line.		
Key Dates	**Benchmark 3 ~ Units 1-12: 04/04 – 04/15**		

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Weeks 22-24	Unit 14: Generating and Representing Measurement Data to Solve Problems		02/02 – 02/20 (13 days)

Operations and Algebraic Thinking	Number and Operations in Base 10	Measurement and Data	Geometry	Math Practices
OA.1[m] 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. OA.2[m] ~~Fluently~~ add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers. 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. OA.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and 5 columns; write an equation to express the total as a sum of equal addends.	NBT.1[m] 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: 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). NBT.2[m] Count within 1000; skip count by *2s*, 5s, 10s, and 100s. *(CA: skip count by 2s)* NBT.3[m] Read and write numbers to 1000 using base-ten materials, number names, and expanded form. NBT.4[m] Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using <, = , and > symbols to record the results of comparisons. NBT.5[m] ~~Fluently~~ add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. NBT.6[m] Add up to four two-digit numbers using strategies based on place value and properties operations. NBT.7[m] Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties or 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, and ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds. *NBT.7.1[m]Use estimation strategies to make reasonable estimates in problem solving. (CA)* NBT.8[m] Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900. NBT.9[m] Explain why addition and subtraction strategies work, using the properties of operations. (Explanations may be supported by drawings or objects.)	MD.1[m] Measure the length of an object by selecting and using appropriate tools such as rules, yardsticks, meter sticks, and measuring tapes. MD.2[m] Measure the length of an object twice, using length units for the two measurements; describe how the two measurements relate to the size of the unit chosen. MD.5[m] 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. MD.6[m] 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. MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. *Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year). (CA)* MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Ex: If you have 2 dimes and 3 pennies, how many cents do you have? **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 in whole-number units.** **MD.10 Draw a picture graph and a bar graph (with single-unit scale) to represent data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.**	G.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	MP1 Make sense of problems and persevere in solving them. MP2 Reason abstractly and quantitatively. MP3 Construct viable arguments and critique the reasoning of others. MP4 Model with mathematics MP5 Use appropriate tools strategically. MP6 Attend to precision. MP8 Look for and express regularity in repeated reasoning.

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GRADE 2 MATH 2015-2016

In this unit, representing and interpreting data supports the development of addition and subtraction using authentic contexts. Representing data using line plots, picture graphs, and bar graphs support students' understanding of measurement and comparison problems.

Note: MD.10 connects to OA.1 when students solve simple problems using data information, so students will be practicing both standards during this unit.

Below are suggested Lesson Resources. Refer to the Survival Kit for additional ideas and resources. Lessons can be taught separately, combined, or out of sequence to meet the needs of your students.

Students make sense of data and use it to solve simple problems (**MP1**). Students reason quantitatively by understanding how to read graphs and line plots (**MP2**). Students can justify their reasoning by explaining addition and subtraction strategies (**MP3**). Line plots and graphing are strong contexts students can use to model mathematics in problem solving (**MP4**). Students use measurement tools to generate data (**MP5**). Students have to be precise in reading measurement tools, line plots, and graphs (**MP6**). Students evaluate the reasonableness of their data results (**MP8**).

Vocabulary	Suggested Lesson Resources		Manipulatives

Line plot
Number line
Data
Length
Round
Nearest whole unit
Collect, sort
Most, least
About
Same
Picture/bar graph
Represent
Tally
Categories
Put-together
Take-apart
Compare
Present
	Chapter 4: Data and Graphs
	CCSS Foldable 2
	4-1: Take a survey
	4-2: Picture Graphs
	4-3: Write a Number Sentence
	4-4: Bar Graphs
	4-5: Different Ways to Show Data
	CCSS2 Make Line Plots (Pg 7-12)
	CCSS3 Analyze Line Plots (Pg 13-18)
	CCSS21 Measurement Data (Pg. 121 – 126)
	4-7: Choose a Strategy
	
	K-5 Math Teaching Resources
	http://www.k-5mathteachingresources.com/2nd-grade-measurement-and-data.html
	(MD.9) Measurement Line Plot
	(MD.10) Button Bar Graph
	(MD.10) Button Pictograph
	(MD.10) Collecting and Representing Data
	
	Common Core Sheets
	(MD.9) http://commoncoresheets.com/SortedByGrade.php?Sorted=2md9
	(MD.10) http://commoncoresheets.com/SortedByGrade.php?Sorted=2md10
		2nd Grade Worksheets:
		http://www.2ndgradeworksheets.net/mathccssworksheets.htm
		Worksheets for MD.9 and MD.10
		
		Illustrative Mathematics: www.illustrativemathematics.org
		MD.9 Growing Bean Plants
		MD.9 Hand Span Measures
		MD.9 The Longest Walk
		MD.10 Favorite Ice Cream Flavor
		
		MARS Tasks (4 categories or years ≥ 2012 meet standard)
		Raisin Boxes (2003; 7 categories) Top Lunch Choices (2009; 5 categories)
		Teeth (2004; 7 categories) Birthdays (2010; 7 categories)
		Reading Books (2005; 6 categories) Tee Shirts (2011; 6 categories)
		Our Class Graphs (2006; 4 categories) **Cake Sale** (2012)
		Backpack Colors (2007; 5 categories) **Seasons** (2014)
		Our Pets (2008; 5 categories) **Finding Out About Our Families** (2015)
		
		Georgia Dept of Ed: https://www.georgiastandards.org/Georgia-Standards/Frameworks/2nd-Math-Unit-3.pdf
		See Table of Contents, Page 14-15
		Measurement Line Plot
		Kangaroo Jumps
		Lizards, Lizards Everywhere
			Items to measure:
			  cuisinaire rods, paper
			  strips, class items, etc.
			
			Measurement tools:
			  ruler, yardstick, meter
			  stick, measuring tape,
			  paper clips, Linking
			  Color Cubes

Number Talks	Continue Hundreds Chart Patterns (±1 and ±10). Do Hundreds Chart Pattern Puzzles, if students understand the ±1 and ±10 pattern (on Teacher Share in Math Talks).		
Key Dates			

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Weeks 34-35	Unit 15: Estimating and Comparing Lengths		05/02 – 05/13 (10 days)
Operations and Algebraic Thinking	**Number and Operations in Base 10**	**Measurement and Data**	**Geometry**	**Math Practices**

Operations and Algebraic Thinking	Number and Operations in Base 10	Measurement and Data	Geometry	Math Practices

2.OA.1[m] 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.
 	
OA.2[m] ~~Fluently~~ add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers.
 	
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.
 	
OA.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and 5 columns; write an equation to express the total as a sum of equal addends.
	NBT.1[m] 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:
	  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).
	
	NBT.2[m] Count within 1000; skip count by *2s*, 5s, 10s, and 100s. *(CA: skip count by 2s)*
	
	NBT.3[m] Read and Write Numbers to 1000 using base-ten materials, number names, and expanded form.
	
	NBT.4[m] Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using <, = , and > symbols to record the results of comparisons.
	
	NBT.5[m] ~~Fluently~~ add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
	
	NBT.6[m] Add up to four two-digit numbers using strategies based on place value and properties operations.
	
	NBT.7[m] Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties or 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, and ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
	
	NBT.7.1[m]Use estimation strategies to make reasonable estimates in problem solving. (CA)
	
	NBT.8[m] Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.
	
	NBT.9[m] Explain why addition and subtraction strategies work, using the properties of operations. (Explanations may be supported by drawings or objects.)
		MD.1[m] Measure the length of an object by selecting and using appropriate tools such as rules, yardsticks, meter sticks, and measuring tapes.
		
		MD.2[m] Measure the length of an object twice, using length units for the two measurements; describe how the two measurements relate to the size of the unit chosen.
		
		MD.3[m] Estimate lengths using units of inches, feet, centimeters, and meters.
		
		MD.4[m] Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.
		
		MD.5[m] 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.
		
		MD.6[m] 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.
		
		MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. *Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year). (CA)*
		
		MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Ex: If you have 2 dimes and 3 pennies, how many cents do you have?
		
		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 in whole-number units.
		
		MD.10 Draw a picture graph and a bar graph (with single-unit scale) to represent data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.
			G.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	MP2 Reason abstractly and quantitatively.
				
				MP3 Construct viable arguments and critique the reasoning of others.
				
				MP5 Use appropriate tools strategically.
				
				MP6 Attend to precision.

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In this unit, students apply their multiple experiences with measurement to estimate lengths. This unit is near the end of the year because students need repeated experience with measuring with standard units before they can effectively estimate lengths.

Note: Although "guess and check" experiences can be useful, MD.3 requires explicit teaching of estimation strategies, such as iteration of a mental image of a unit or comparison with a known measurement. This prompts students to learn reference or benchmark lengths, order points along a continuum, and build up mental rulers.

Below are suggested Lesson Resources. Refer to the Survival Kit for additional ideas and resources. Lessons can be taught separately, combined, or out of sequence to meet the needs of your students.

Students explain their thinking and analyze others' arguments regarding both the validity of their estimate and how and why they used particular tools (**MP3**, **MP5**). In order to formulate accurate estimations, students much have a coherent representation of the problems and consider the units involved (**MP2**). Students will attend to precision with measuring and use of academic language (**MP6**).

Vocabulary	Suggested Lesson Resources		Manipulatives
Estimate Standard unit Inch Foot/feet Yard Customary unit Metric Centimeter Meter Measure Longer/shorter Difference Compare	**Chapter 12: Measurement and Time** 12-2 Measure to the Nearest Inch 12-3 Inch, Foot, Yard CCSS15 Compare Customary Lengths 12-5 Measure to the Nearest Centimeter 12-6 Centimeter and Meter CCSS18 Compare Metric Lengths **K-5 Math Teaching Resources:** http://www.k-5mathteachingresources.com/2nd-grade-measurement-and-data.html See all activities under MD.3 and MD.4 **Common Core Sheets** (MD.3) http://www.commoncoresheets.com/SortedByGrade.php?Sorted=2md3 (MD.4) http://www.commoncoresheets.com/SortedByGrade.php?Sorted=2md4	**2nd Grade Worksheets:** **http://www.2ndgradeworksheets.net/mathccssworksheets.htm** Worksheets for MD.3 and MD.4 **Illustrative Mathematics: www.illustrativemathematics.org** MD.3 Determining Length **Georgia Dept of Ed:** https://www.georgiastandards.org/Common-Core/Common%20Core%20Frameworks/CCGPS_Math_2_Unit3Framework.pdf Footprints Make Your Own Ruler and Gummy Work Stretch My Big Feet Snail and Lizards Measurement Scavenger Hunt	Measuring tools
Number Talks	Addition and Subtraction Strategies within 20 (students can demonstrate fluency using various strategies)		
Key Dates			

- Newly introduced standards are in **bold print**
- Standards with ~~strikethroughs~~ are not taught yet
- California Common Core Standards Booklet

Weeks 36-37	Unit 16: Reasoning with Shapes and Their Attributes			05/16 – 05/27 (10 days)
Operations and Algebraic Thinking	**Number and Operations in Base 10**	**Measurement and Data**	**Geometry**	**Math Practices**

OA.1[m]   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.
 	
OA.2[m] ~~Fluently~~ add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers.
 	
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.
 	
OA.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and 5 columns; write an equation to express the total as a sum of equal addends.
	NBT.1[m] 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:
	  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).
	
	NBT.2[m] Count within 1000; skip count by *2s*, 5s, 10s, and 100s. *(CA: skip count by 2s)*
	
	NBT.3[m] Read and write numbers to 1000 using base-ten materials, number names, and expanded form.
	
	NBT.4[m] Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using <, = , and > symbols to record the results of comparisons.
	
	NBT.5[m] ~~Fluently~~ add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
	
	NBT.6[m] Add up to four two-digit numbers using strategies based on place value and properties operations.
	
	NBT.7[m] Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties or 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, and ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
	
	NBT.7.1[m]Use estimation strategies to make reasonable estimates in problem solving. (CA)
	
	NBT.8[m] Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.
	
	 NBT.9[m] Explain why addition and subtraction strategies work, using the properties of operations. (Explanations may be supported by drawings or objects.)
		MD.1[m] Measure the length of an object by selecting and using appropriate tools such as rules, yardsticks, meter sticks, and measuring tapes.
		
		MD.2[m] Measure the length of an object twice, using length units for the two measurements; describe how the two measurements relate to the size of the unit chosen.
		
		MD.5[m] 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.
		
		MD.6[m] 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.
		
		MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. *Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year). (CA)*
		
		MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Ex: If you have 2 dimes and 3 pennies, how many cents do you have?
		
		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 in whole-number units.
		
		MD.10 Draw a picture graph and a bar graph (with single-unit scale) to represent data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.
			G.1 Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of faces. (Sizes are compared directly or visually, not compared by measuring.) Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
			
			G.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.
			
			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 whole need not have the same shape.
				MP2 Reason abstractly and quantitatively.
				
				MP3 Construct viable arguments and critique the reasoning of others.

- Newly introduced standards are in **bold print**
- Standards with ~~strikethroughs~~ are not taught yet
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In this unit, students name and describe defining attributes of two-dimensional shapes by examining their sides and angles. Students also extend their work from Grade 1 of partitioning geometric figures into halves and fourths to now include thirds. Students use this experience to reason about partitions' equal area and part-whole relationships.

Below are suggested Lesson Resources. Refer to the Survival Kit for additional ideas and resources. Lessons can be taught separately, combined, or out of sequence to meet the needs of your students.

Students make sense of spatial quantities and their relationships when partitioning shapes – in particular, understanding that equal shares of a geometric figure may not be congruent shapes (**MP2**). Constructing viable arguments is critical to developing an understanding of defining an understanding of defining attributes and reasoning about equal shares (**MP3**).

Vocabulary	Suggested Lesson Resources		Manipulatives

Angles
Faces
Equal
Triangles
Cube
Attributes
Regular
Irregular
Halves/half of
Thirds/third of
Fourths/fourth of
	Chapter 11: Geometry
	CCSS Foldable 8
	11-1 Solid Shapes
	11-2 Faces, Edges, and Vertices
	CCSS11 Two-Dimensional Shapes
	11-5 Sides and Vertices
	11-6 Relate Plane Shapes to Solid Shapes
	11-7 Make New Shapes
	CCSS12 Halves, Thirds, and Fourths
	(Use Problem Solving Sections for BoardMath, problem of the day, etc)
	
	http://www.k-5mathteachingresources.com/2nd-grade-geometry.html
	See all activities under G.1 and G.3
	(Not G.3 Fraction Barrier Game)
	
	Common Core Sheets
	(G.1) http://www.commoncoresheets.com/SortedByGrade.php?Sorted=2g1
	(G.3) http://www.commoncoresheets.com/SortedByGrade.php?Sorted=2g3
	
	2nd Grade Worksheets:
	http://www.2ndgradeworksheets.net/mathccssworksheets.htm
	Worksheets for G.1 and G.3
		Team Umizoomi (Mini 3 minute clip)
		Shape Bandit: http://www.nickjr.com/team-umizoomi/videos/team-umizoomi-shape-bandit/
		The Dragon Kite: http://www.nickjr.com/team-umizoomi/videos/umizoomi-104-the-green-rectangle-kite/
		Factory Fiasco: http://www.nickjr.com/team-umizoomi/videos/team-umizoomi-robo-tools/
		Games: Shape Bandit, Kite Building, Geo's Shape Building, UmiCar's Shape Race
		http://www.nickjr.com/kids-games/team-umizoomi/
		
		Illustrative Mathematics: https://www.illustrativemathematics.org/2
		(G.1) Polygons
		(G.3) Representing Half of a Rectangle
		(G.3) Which Pictures Represent One Half?
		
		MARS Tasks
		Building with Squares (Practice) Don's Shape (2008) Bake Sale (2015)
		Which Shape? (2004) Auntie Em's Cookies (2009)
		Half and Half (2005) The Playhouse (2011)
		Describing Shapes (2006) Kenny's Challenges (2013)
		Making Designs (2007) Quilt Designs (2014)
		
		Georgia Dept of Ed: https://www.georgiastandards.org/Common-Core/Common%20Core%20Frameworks/CCGPS_Math_2_Unit5Framework.pdf
		Natural Shapes The Curious Case of the Cube
		Shape Robot Net or Not?
		The Shape of Things Sharing Equally
		Greedy Shapes Fraction Cookies
				2-D Shapes
				Solid Shapes
				Basic Fraction Tiles
				  (Circles/Squares)
				Geoboards
				Materials to make solid
				  figures (clay, straws,
				  toothpicks,
				  marshmallows, etc)

Number Talks	Addition and Subtraction Strategies –within 100 (Students can demonstrate fluency using various strategies)		
Key Dates	**Benchmark 4 ~ Units 1-15: 05/16 – 05/27**		

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- California Common Core Standards Booklet

Week 38	Unit 15: Demonstrating Fluency in Addition and Subtraction			05/31 – 06/03 (4 days)
Operations and Algebraic Thinking	**Number and Operations in Base 10**	**Measurement and Data**	**Geometry**	**Math Practices**
OA.1[m] 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. OA.2[m] **Fluently** add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers. 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. OA.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and 5 columns; write an equation to express the total as a sum of equal addends.	NBT.1[m] 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: 　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). NBT.2[m] Count within 1000; skip count by *2s*, 5s, 10s, and 100s. *(CA: skip count by 2s)* NBT.3[m] Read and write numbers to 1000 using base-ten materials, number names, and expanded form. NBT.4[m] Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using <, = , and > symbols to record the results of comparisons. NBT.5[m] **Fluently** add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. NBT.6[m] Add up to four two-digit numbers using strategies based on place value and properties operations. NBT.7[m] Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties or 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, and ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds. *NBT.7.1[m]Use estimation strategies to make reasonable estimates in problem solving. (CA)* NBT.8[m] Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900. NBT.9[m] Explain why addition and subtraction strategies work, using the properties of operations. (Explanations may be supported by drawings or objects.)	MD.1[m] Measure the length of an object by selecting and using appropriate tools such as rules, yardsticks, meter sticks, and measuring tapes. MD.2[m] Measure the length of an object twice, using length units for the two measurements; describe how the two measurements relate to the size of the unit chosen. MD.3[m] Estimate lengths using units of inches, feet, centimeters, and meters. MD.4[m] Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. MD.5[m] 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. MD.6[m] 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. MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. *Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year). (CA)* MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Ex: If you have 2 dimes and 3 pennies, how many cents do you have? 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 in whole-number units. MD.10 Draw a picture graph and a bar graph (with single-unit scale) to represent data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.	G.1 Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of faces. (Sizes are compared directly or visually, not compared by measuring.) Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. G.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them. 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 whole need not have the same shape.	MP1 Make sense of problems and persevere in solving them. MP2 Reason abstractly and quantitatively. MP3 Construct viable arguments and critique the reasoning of others. MP4 Model with mathematics. MP5 Use appropriate math tools strategically. MP6 Attend to precision. MP7 Look for and make use of structure. MP8 Look for and express regularity in repeated reasoning.

- Newly introduced standards are in **bold print**
- Standards with ~~strikethroughs~~ are not taught yet
- California Common Core Standards Booklet

GRADE 2 MATH 2015-2016

This is a culminating unit in which students demonstrate fluency and are expected to use and explain strategies for accurate and efficient addition and subtraction. By this time in the year, students should be able to solve all problem types in Table 1 in the Common Core State Standards for Mathematics (p. 148; See Math Survival Kit, "Common Addition and Subtraction Situations)

Note: This unit is to demonstrate fluency in OA.2 and NBT.5. Therefore, <u>focus on word problems with Addition and Subtraction (OA.1)</u>. However, you can take some time to do any problem solving from the text or tasks from above units as well.

Below are suggested Lesson Resources. Refer to the Survival Kit for additional ideas and resources. Lessons can be taught separately, combined, or out of sequence to meet the needs of your students.

Students will be using all of the math practices in this unit. The practices demonstrated depend on the task given.

Vocabulary	Suggested Lesson Resources		Manipulatives
Unit 1-14 Vocabulary	**Chapter 4: Addition and Subtraction** Re-use problems in sections to demonstrate fluency **2nd Grade Worksheets** http://www.2ndgradeworksheets.net/mathccssworksheets.htm Use OA.2 and NBT.5 Worksheets to demonstrate Fluency **K-5 Math Teaching Resources:** http://www.k-5mathteachingresources.com/2nd-grade-number-activities.html See all activities under OA.1 **Common Core Sheets** (OA.1) http://www.commoncoresheets.com/SortedByGrade.php?Sorted=2oa1	**Illustrative Mathematics:** https://www.illustrativemathematics.org/2 (OA.1) A Pencil and a Sticker (OA.1) Saving Money 2 **MARS Tasks** See tasks from units 1 and 6 **Georgia Dept of Ed:** https://www.georgiastandards.org/Common-Core/Common%20Core%20Frameworks/CCGPS_Math_2_Unit2Framework.pdf Any of the tasks	Make tools available for students to access if needed.
Number Talks	Addition and Subtraction Strategies within 100 (students can demonstrate fluency using various strategies)		
Key Dates	Holiday: Memorial Day Holiday – 5/30 Last Day of School – 6/7 End of Trimester 3 – 6/8		

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- California Common Core Standards Booklet

CCSS BOARDMATH: Grade 2			
Operations and Algebraic Thinking	**Numbers in Base 10**	**Measurement and Data**	**Mathematical Reasoning**
Addition/Subtraction Problems (1 problem)	**Understand Base Ten (3 problems)**	**Measuring Length (1 problem)**	**Word Problems (1 Problem)**
OA.1	NBT.1 NBT.2 NBT.3 NBT.4	MD.1 MD.2 MD.3 MD.4	Some Examples: • Problem of the Day • Partial MARS Task • Patterns (Chapter 1-8) • Word Problems with no question: With the given information, what questions can be asked? • Draw it out • Act it out • Explain your reasoning • Critique the reasoning of others
		Addition/Subtraction with Length (1 problem)	
Addition and Subtraction (2 problems)		MD.5 MD.6	
OA.2		**Represent/Interpret Data – Time and Money (Rotate 1 problem based on student needs)**	
		MD.7 MD.8 MD.9 MD.10	
	Addition and Subtraction (3 problems)	**Geometry**	
Foundations for Multiplication (1 problem)	NBT.5 NBT.6 NBT.7 NBT.8 NBT.9	**Reason with Shapes and their Attributes (2 problems)**	
OA.3 OA.4		G.1 G.2 G.3	

15 Problems

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