Grade 2 Mathematics

Standards Resources:

This document does not contain all of the Common Core Standards, but stresses the major clusters as identified by Achieve the Core. These priority standards require greater emphasis than the others based on the depth of the ideas, the time that it takes to master, and/or their importance to future mathematics or the demands of college and career readiness.*

However, it is important that the standards which are not deconstructed in this document continue to be part of your instruction. Neglecting those standards may leave gaps in student skill and understanding as well as not preparing students for the challenges of a later grade.

***PPS Deconstructed Standards: Unpacked Content by Learning Progressions** is intended to clarify concepts inherent in the Common Core State Standards. These are an instructional resource that should be used to facilitate planning for units of study in Math, creating common assessments and general instructional support of CCSS.*

Resources from the following states were used to draft these documents: Arizona Dept. of Education; Kentucky Dept of Education Core Academic Standards with Targets; PPS CCSS Correlations; North Carolina Dept of Public Instruction Unpacked Content; Common Core Institute. Adjustments and modifications have been made to customize content for the PPS district.

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DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Represent and solve problems involving addition and subtraction.
Standard: 2.OA.1

Connecting Standards	Standard/Learning Outcome:	Connecting Standards
1.NBT.C.4 **1.NBT.C.5** **1.NBT.C.6** **1.OA.A.1**	CCSS.MATH.CONTENT.2.OA.A.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	**3.OA.B.6** **4.NF.B.3**

Mathematical Practices
2.MP.1. Make sense of problems and persevere in solving them. 2.MP.2. Reason abstractly and quantitatively. 2.MP.3. Construct viable arguments and critique the reasoning of others. 2.MP.4. Model with mathematics. 2.MP.5. Use appropriate tools strategically. 2.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions	
● How do I know a problem is addition or subtraction? ● How can I represent an addition or subtraction problem using numbers? ● How do the known numbers in a problem help me to solve the unknown number?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Identify the unknown in an addition or subtraction word problem.	● Determine operation needed to solve addition and subtraction problems in situations including add to, take from, put together, take apart, and compare ● Use drawings or equations to represent one- and two-step word problems. ● Add and subtract within 100 to solve one-step word problems with unknowns in all positions. ● Write an addition and subtraction equation with a symbol for the unknown.

Academic Vocabulary	Explanations and Examples
Key Terms ● Add ● Subtract ● More ● Less ● Equal ● Equation ● Putting together ● Taking from ● Taking apart ● Addend	Word problems that are connected to students' lives can be used to develop fluency with addition and subtraction. Table 1 describes the four different addition and subtraction situations and their relationship to the position of the unknown. Examples: • Take From example: David had 63 stickers. He gave 37 to Susan. How many stickers does David have now? 63 – 37 = ___ • Add To example: David had $37. His grandpa gave him some money for his birthday. Now he has $63. How much money did David's grandpa give him? $37 + ___ = $63 • Compare example: David has 63 stickers. Susan has 37 stickers. How many more stickers does David have than Susan? 63 – 37 = ___

	○ Even though the modeling of the two problems above is different, the equation, 63 - 37 = ?, can represent both situations (How many more do I need to make 63?) • Take From (Start Unknown) David had some stickers. He gave 37 to Susan. Now he has 26 stickers. How many stickers did David have before? ___ - 37 = 26 It is important to attend to the difficulty level of the problem situations in relation to the position of the unknown. • Result Unknown, Total Unknown, and Both Addends Unknown problems are the least complex for students. • The next level of difficulty includes Change Unknown, Addend Unknown, and Difference Unknown • The most difficult are Start Unknown and versions of Bigger and Smaller Unknown (compare problems) Second graders should work on ALL problem types regardless of the level of difficulty. Mastery is expected in second grade. Students can use interactive whiteboard or document camera to demonstrate and justify their thinking. This standard focuses on developing an algebraic representation of a word problem through addition and subtraction --the intent is not to introduce traditional algorithms or rules.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Add and subtract within 20.
Standard: 2.OA.2

Connecting Standards	Standard/Learning Outcome:	Connecting Standard
1.OA.C.6 **1.OA.A.1**	CCSS.MATH.CONTENT.2.OA.B.2 Fluently add and subtract within 20 using mental strategies. * By end of Grade 2, know from memory all sums of two one-digit numbers.	**2.NBT.B.5**

Mathematical Practices
2.MP.2. Reason abstractly and quantitatively. 2.MP.7. Look for and make use of structure. 2.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions	
● Why is it important to add and subtract facts in my head? ● How can math facts help me solve problems?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Know mental strategies for addition and subtraction. ● Know from memory all sums of two one-digit numbers.	● Apply mental strategies to add and subtract fluently within 20. ● Fluently add and subtract within 20.

Academic Vocabulary	Explanations and Examples
Key Terms ● Add ● Subtract	This standard is strongly connected to all the standards in this domain. It focuses on students being able to fluently add and subtract numbers to 20. Adding and subtracting fluently refers to knowledge of procedures, knowledge of when and how to use them appropriately, and skill in performing them flexibly, accurately, and efficiently. Mental strategies help students make sense of number relationships as they are adding and subtracting within 20. The ability to calculate mentally with efficiency is very important for all students. Mental strategies may include the following: • Counting on • Making tens (9 + 7 = 10 + 6) • Decomposing a number leading to a ten (14 – 6 = 14 – 4 – 2 = 10 – 2 = 8) • Fact families (8 + 5 = 13 is the same as 13 - 8 = 5) • Doubles • Doubles plus one (7 + 8 = 7 + 7 + 1) However, the use of objects, diagrams, or interactive whiteboards, and various strategies will help students develop fluency.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Understand place value.
Standard: 2.NBT.1

Connecting Standards	Standard/Learning Outcome:	Connecting Standards
1.NBT.B.2 **2.NBT.A.2**	CCSS.MATH.CONTENT.2.NBT.A.1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: CCSS.MATH.CONTENT.2.NBT.A.1.a 100 can be thought of as a bundle of ten tens — called a "hundred." CCSS.MATH.CONTENT.2.NBT.A.1.b The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).	**2.NBT.A.3** **2.NBT.A.4** **2.NBT.B.6** **2.NBT.B.7** **2.NBT.B.8** **3.NBT.A.1** **3.NBT.A.3** **4.NBT.A.1**

Mathematical Practices
2.MP.2. Reason abstractly and quantitatively. 2.MP.7. Look for and make use of structure. 2.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions	
● What does a digit's position in a number tell about its value?	
Substandard Deconstruction	**2.NBT.1a : 100 can be thought of as a bundle of ten tens — called a "hundred.**
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Explain the value of each digit in a 3-digit number. ● Identify a bundle of 10 tens as a "hundred ".	● Represent a three-digit number with hundreds, tens, and ones.
Substandard Deconstruction	**2.NBT.1b: The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).**
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Represent 200, 300, 400, 500, 600, 700, 800, 900 with one, two, three, four, five, six, seven, eight, or nine hundreds and 0 tens and 0 ones.	

Academic Vocabulary	Explanations and Examples
Key Terms ● Hundreds ● Tens ● Ones	Understanding that 10 ones make one ten and that 10 tens make one hundred is fundamental to students' mathematical development. Students need multiple opportunities counting and "bundling" groups of tens in first grade. In second grade, students build on their understanding by making bundles of 100s with or without leftovers using base ten blocks, cubes in towers of 10, ten frames, etc. This emphasis on bundling hundreds will support students' discovery of place value patterns. As students are representing the various amounts, it is important that emphasis is placed on the language associated with the quantity. For example, 243 can be expressed in multiple ways such as 2 groups of hundreds, 4 groups of ten and 3 ones, as well as 24 tens and 3 ones. When students read numbers, they should read in standard form as well as using place value concepts. For example, 243 should be read as "two hundred forty-three" as well as two hundreds, 4 tens, 3 ones. A document camera or interactive whiteboard can also be used to demonstrate "bundling" of objects. This gives students the opportunity to communicate their thinking.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Understand place value.
Standard: 2.NBT.2

Connecting Standard	Standard/Learning Outcome:	Connecting Standard
	CCSS.MATH.CONTENT.2.NBT.A.2 Count within 1000; skip-count by 5s, 10s, and 100s.	**2.NBT.A.1**

Mathematical Practices
2.MP.2. Reason abstractly and quantitatively. 2.MP.7. Look for and make use of structure. 2.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions	
● How does place value help me skip-count?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Count within 1000. ● Skip-count by 5s to 1000. ● Skip-count by 10s to 1000. ● Skip-count by 100s to 1000.	

Academic Vocabulary	Explanations and Examples
Key Terms ● Hundreds ● Tens ● Ones ● Skip count	Students need many opportunities counting, up to 1000, from different starting points. They should also have many experiences skip counting by 5s, 10s, and 100s to develop the concept of place value. Examples: ● The use of the 100s chart may be helpful for students to identify the counting patterns. ● The use of money (nickels, dimes, dollars) or base ten blocks may be helpful visual cues. ● The use of an interactive whiteboard may also be used to develop counting skills. The ultimate goal for second graders is to be able to count in multiple ways with no visual support.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Understand place value.
Standard: 2.NBT.3

Connecting Standard	Standard/Learning Outcome:	Connecting Standard
2.NBT.A.1	CCSS.MATH.CONTENT.2.NBT.A.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.	

Mathematical Practices
2.MP.2. Reason abstractly and quantitatively. 2.MP.7. Look for and make use of structure. 2.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions
● How else can I represent a number using place value? ● How can place value help me solve problems?

KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Know what expanded form means. ● Recognize that the digits in each place represent amounts of thousands, hundreds, tens, or ones. ● Read numbers to 1000 using base ten numerals. ● Read numbers to 1000 using number names. ● Read numbers to 1000 using expanded form. ● Write numbers to 1000 using base ten numerals. ● Write numbers to 1000 using number names. ● Write numbers to 1000 using expanded form.	● Decompose numbers less than or equal to 10 into pairs in more than one way. ● Record decomposition of a number within 10 by a drawing or written equation.

Academic Vocabulary	**Explanations and Examples**
Key Terms ● Hundreds ● Tens ● Ones ● Base-ten ● Number names to 1,000 (e.g., one, two, thirty, etc.) ● Expanded form	Students need many opportunities reading and writing numerals in multiple ways. Examples: ● Base-ten numerals 637 (standard form) ● Number names six hundred thirty seven (written form) ● Expanded form 600 + 30 + 7 (expanded notation) When students say the expanded form, it may sound like this: “6 hundreds plus 3 tens plus 7 ones” or 600 plus 30 plus 7.”

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Understand place value.
Standard: 2.NBT.4

Connecting Standard	Standard/Learning Outcome:	Connecting Standard
2.NBT.A.1	CCSS.MATH.CONTENT.2.NBT.A.4 Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.	

Mathematical Practices
2.MP.2. Reason abstractly and quantitatively. 2.MP.6. Attend to precision. 2.MP.7. Look for and make use of structure. 2.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions	
● Why is a number greater than, less than, or equal to another number? ● How does the place value in numbers help me compare?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Know the value of each digit represented in a three-digit number. ● Know what >, <, and = symbols each represent	● Compare two three-digit numbers based on place value of each digit ● Use >, =, and < symbols to record the results of comparisons.

Academic Vocabulary	Explanations and Examples
Key Terms ● Greater than (>) ● Less than (<) ● Equal to (=) ● Digit ● Compare	Students may use models, number lines, base ten blocks, interactive whiteboards, document cameras, written words, and/or spoken words that represent two three-digit numbers. To compare, students apply their understanding of place value. They first attend to the numeral in the hundreds place, then the numeral in tens place, then, if necessary, to the numeral in the ones place. Comparative language includes but is not limited to: more than, less than, greater than, most, greatest, least, same as, equal to and not equal to. Students use the appropriate symbols to record the comparisons.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics

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

Standard: 2.NBT.5

Connecting Standard	Standard/Learning Outcome:	Connecting Standard
1.NBT.C.4 **1.NBT.C.5** **1.NBT.C.6** **2.OA.B.2**	CCSS.MATH.CONTENT.2.NBT.B.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	

Mathematical Practices
2.MP.2. Reason abstractly and quantitatively. 2.MP.7. Look for and make use of structure. 2.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions	
● Why is place value important when I add and subtract? ● Which strategy will help me solve this problem the best?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Know strategies for adding and subtracting based on place value. ● Know strategies for adding and subtracting based on properties of operations. ● Know strategies for adding. ● and subtracting based on the relationship between addition and subtraction. ● Fluently add and subtract within 100.	● Choose a strategy (place value, properties of operations, and /or the relationship between addition and subtraction) to uently add and subtract within 100.

Academic Vocabulary	Explanations and Examples
Key Terms ● Add ● Subtract ● Sum ● Equal ● Addition ● Subtraction	Adding and subtracting fluently refers to knowledge of procedures, knowledge of when and how to use them appropriately, and skill in performing them flexibly, accurately, and efficiently. Students should have experiences solving problems written both horizontally and vertically. They need to communicate their thinking and be able to justify their strategies both verbally and with paper and pencil. Addition strategies based on place value for 48 + 37 may include: ● Adding by place value: 40 + 30 = 70 and 8 + 7 = 15 and 70 + 15 = 85. ● Incremental adding (breaking one number into tens and ones); 48 + 10 = 58, 58 + 10 = 68, 68 + 10 = 78, 78 + 7 = 85 ● Compensation (making a friendly number): 48 + 2 = 50, 37 – 2 = 35, 50 + 35 = 85 Subtraction strategies based on place value for 81 - 37 may include: ● Adding up (from smaller number to larger number): 37 + 3 = 40, 40 + 40 = 80, 80 + 1 = 81, and 3 + 40 + 1 = 44. ● Incremental subtracting: 81 -10 = 71, 71 – 10 = 61, 61 – 10 = 51, 51 – 7 = 44 ● Subtracting by place value: 81 – 30 = 51, 51 – 7 = 44 Properties that students should know and use are: ● Commutative property of addition (Example: 3 + 5 = 5 + 3) ● Associative property of addition (Example: (2 + 7) + 3 = 2 + (7+3)) ● Identity property of 0 (Example: 8 + 0 = 8)

	Students in second grade need to communicate their understanding of why some properties work for some operations and not for others. ● Commutative Property: In first grade, students investigated whether the commutative property works with subtraction. The intent was for students to recognize that taking 5 from 8 is not the same as taking 8 from 5. Students should also understand that they will be working with numbers in later grades that will allow them to subtract larger numbers from smaller numbers. This exploration of the commutative property continues in second grade. Associative Property: Recognizing that the associative property does not work for subtraction is difficult for students to consider at this grade level as it is challenging to determine all the possibilities.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics

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

Standard: 2.NBT.6

Connecting Standards	Standard/Learning Outcome:	Connecting Standard
2.NBT.A.1 **2.NBT.B.7**	CCSS.MATH.CONTENT.2.NBT.B.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.	

Mathematical Practices
2.MP.2. Reason abstractly and quantitatively. 2.MP.7. Look for and make use of structure. 2.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions
● Why is place value important when I add and subtract? ● Which strategy will help me solve this problem the best?

KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Know strategies for adding two- digit numbers based on place value and properties of operations.	● Use strategies to add up to four two-digit numbers.

Academic Vocabulary	Explanations and Examples
Key Terms ● Add ● Subtract ● Sum ● Equal ● Addition ● Subtraction	Students demonstrate addition strategies with up to four two-digit numbers either with or without regrouping. Problems may be written in a story problem format to help develop a stronger understanding of larger numbers and their values. Interactive whiteboards and document cameras may also be used to model and justify student thinking.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics

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

Standard: 2.NBT.7

Connecting Standard	Standard/Learning Outcome:	Connecting Standards
2.NBT.A.1	CCSS.MATH.CONTENT.2.NBT.B.7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.	**2.NBT.B.6** **3.NBT.A.2**

Mathematical Practices
2.MP.2. Reason abstractly and quantitatively. 2.MP.4. Model with mathematics. 2.MP.5. Use appropriate tools strategically. 2.MP.7. Look for and make use of structure. 2.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions
● Why do I need to understand place value to add add and subtract 3-digit numbers? ● How can I show this addition or subtraction problem? ● Which strategy will help me solve this problem the best?

KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Understand place value within 1000. ● Decompose any number within 1000 into hundreds, tens, and ones.	● Choose an appropriate strategy for solving an addition or subtraction problem within 1000. ● Relate the chosen strategy (using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction) to a written method (equation) and explain the thinking used. ● Use composition and decomposition of hundreds and tens when necessary to add and subtract within 1000.

Academic Vocabulary	**Explanations and Examples**
Key Terms ● Compose ● Decompose ● Place value ● Add ● Subtract ● Sum ● Equal ● Addition ● Subtraction	There is a strong connection between this standard and place value understanding with addition and subtraction of smaller numbers. Students may use concrete models or drawings to support their addition or subtraction of larger numbers. Strategies are similar to those stated in 2.NBT.5, as students extend their learning to include greater place values moving from tens to hundreds to thousands. Interactive whiteboards and document cameras may also be used to model and justify student thinking.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics

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

Standard: 2.NBT.8

Connecting Standard	Standard/Learning Outcome:	Connecting Standard
2.NBT.A.1	CCSS.MATH.CONTENT.2.NBT.B.8 Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.	**3.NBT.A.2**

Mathematical Practices
2.MP.2. Reason abstractly and quantitatively. 2.MP.7. Look for and make use of structure. 2.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions
● Why can I add or subtract 10 to a number easily? ● Why can I add or subtract 100 to a number easily? ● How will being able to add and subtract 10 or 100 for any number help me solve real-world problems?

KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Know place value within 1000.	● Apply knowledge of place value to mentally add or subtract 10 or 100 to/from a given number 100-900.

Academic Vocabulary	Explanations and Examples
Key Terms ● Fluent ● Compose ● Decompose ● Place value ● Digit ● Ten more ● Ten less ● One hundred more ● One hundred less	Students need many opportunities to practice mental math by adding and subtracting multiples of 10 and 100 up to 900 using different starting points. They can practice this by counting and thinking aloud, finding missing numbers in a sequence, and finding missing numbers on a number line or hundreds chart. Explorations should include looking for relevant patterns. Mental math strategies may include: ● counting on; 300, 400, 500, etc. ● counting back; 550, 450, 350, etc. Examples: ● 100 more than 653 is _____ (753) ● 10 less than 87 is _____ (77) ● “Start at 248. Count up by 10s until I tell you to stop.” An interactive whiteboard or document camera may be used to help students develop these mental math skills.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics

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

Standard: 2.NBT.9

Connecting Standards	Standard/Learning Outcome:	Connecting Standard
1.OA.B.3 **1.OA.B.4**	CCSS.MATH.CONTENT.2.NBT.B.9 Explain why addition and subtraction strategies work, using place value and the properties of operations.	

Mathematical Practices
2.MP.2. Reason abstractly and quantitatively. 2.MP.3. Construct viable arguments and critique the reasoning of others. 2.MP.4. Model with mathematics. 2.MP.5. Use appropriate tools strategically. 2.MP.7. Look for and make use of structure. 2.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions
● Which strategy will help me solve this problem the best? ● Why did my strategy work to solve a problem? ● What could be another strategy I could have used to solve a problem?

KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Know addition and subtraction strategies using place value and properties of operations related to addition and subtraction.	● Explain why addition and subtraction strategies based on place value and properties of operations work.

Academic Vocabulary	Explanations and Examples
Key Terms ● Strategy ● Add ● Subtract ● Sum ● Equal ● Addition ● Subtraction	Students need multiple opportunities explaining their addition and subtraction thinking. Operations embedded within a meaningful context promote development of reasoning and justification. **Example**: Mason read 473 pages in June. He read 227 pages in July. How many pages did Mason read altogether? ● Karla's explanation: 473 + 227 = _____. I added the ones together (3 + 7) and got 10. Then I added the tens together (70 + 20) and got 90. I knew that 400 + 200 was 600. So I added 10 + 90 for 100 and added 100 + 600 and found out that Mason had read 700 pages altogether. ● Debbie's explanation: 473 + 227 = _____. I started by adding 200 to 473 and got 673. Then I added 20 to 673 and I got 693 and finally I added 7 to 693 and I knew that Mason had read 700 pages altogether. ● Becky's explanation: I used base ten blocks on a base ten mat to help me solve this problem. I added 3 ones (units) plus 7 ones and got 10 ones which made one ten. I moved the 1 ten to the tens place. I then added 7 tens rods plus 2 tens rods plus 1 tens rod and got 10 tens or 100. I moved the 1 hundred to the hundreds place. Then I added 4 hundreds plus 2 hundreds plus 1 hundred and got 7 hundreds or 700. So Mason read 700 books. Students should be able to connect different representations and explain the connections. Representations can include numbers, words (including mathematical language), pictures, number lines, and/or physical objects. Students should be able to use any/all of these representations as needed. An interactive whiteboard or document camera can be used to help students develop and explain their thinking.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Measure and estimate lengths in standard units.
Standard: 2.MD.1

Connecting Standard	Standard/Learning Outcome:	Connecting Standards
1.MD.A.2	CCSS.MATH.CONTENT.2.MD.A.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	**2.MD.A.2** **2.MD.A.3** **3.MD.C.5**

Mathematical Practices
2.MP.5. Use appropriate tools strategically. 2.MP.6. Attend to precision. 2.MP.7. Look for and make use of structure.

Guiding Questions	
● Why do we use tools to measure? ● Why did I choose the tool I did to measure an object? ● How would changing the tool I use to measure change the measurement?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Identify tools that can be used to measure length.	● Determine which tool is most appropriate to use to measure the length of an object. ● Measure the length of objects, using appropriate tools.

Academic Vocabulary	Explanations and Examples
Key Terms ● Inch ● Foot ● Centimeter ● Meter ● Ruler ● Yardstick ● Meterstick ● Measuring tape	Students in second grade will build upon what they learned in first grade from measuring length with non-standard units to the new skill of measuring length in metric and U.S. Customary with standard units of measure. They should have many experiences measuring the length of objects with rulers, yardsticks, meter sticks, and tape measures. They will need to be taught how to actually use a ruler appropriately to measure the length of an object especially as to where to begin the measuring. Do you start at the end of the ruler or at the zero?

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Measure and estimate lengths in standard units.
Standard: 2.MD.2

Connecting Standards	Standard/Learning Outcome:	Connecting Standard
2.MD.A.1 **2.MD.A.3**	CCSS.MATH.CONTENT.2.MD.A.2 Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.	**3.NF.A.1**

Mathematical Practices
2.MP.2. Reason abstractly and quantitatively. 2.MP.3. Construct viable arguments and critique the reasoning of others. 2.MP.5. Use appropriate tools strategically. 2.MP.6. Attend to precision.

Guiding Questions	
● How does measuring the same object with a different unit change the measurement? ● Why does one unit make more sense to use than another?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Know how to measure the length of objects with different units.	● Compare measurements of an object taken with two different units. ● Describe why the measurements of an object taken with two different units are different. ● Explain the length of an object in relation to the size of the units used to measure it.

Academic Vocabulary	Explanations and Examples
Key Terms ● Longer ● Shorter ● Inch ● Foot ● Centimeter ● Meter ● Ruler ● Yardstick ● Meterstick ● Measuring tape	Students need multiple opportunities to measure using different units of measure. They should not be limited to measuring within the same standard unit. Students should have access to tools, both U.S. Customary and metric. The more students work with a specific unit of measure, the better they become at choosing the appropriate tool when measuring. Students measure the length of the same object using different tools (ruler with inches, ruler with centimeters, a yardstick, or meter stick). This will help students learn which tool is more appropriate for measuring a given object. They describe the relationship between the size of the measurement unit and the number of units needed to measure something. For instance, a student might say, “The longer the unit, the fewer I need.” Multiple opportunities to explore provide the foundation for relating metric units to customary units, as well as relating within customary (inches to feet to yards) and within metric (centimeters to meters).

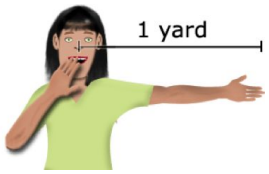
DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Measure and estimate lengths in standard units.
Standard: 2.MD.3

Connecting Standard	Standard/Learning Outcome:	Connecting Standard
2.MD.A.1	CCSS.MATH.CONTENT.2.MD.A.3 Estimate lengths using units of inches, feet, centimeters, and meters.	**2.MD.A.2** **2.MD.A.4**

Mathematical Practices
2.MP.5. Use appropriate tools strategically. 2.MP.6. Attend to precision.

Guiding Questions
● How does knowing about different units of measurement help me estimate the length of an object?

KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Know strategies for estimating length. ● Recognize the size of inches, feet, centimeters, and meters.	● Determine if an estimate is reasonable. ● Estimate lengths in units of inches, feet, centimeters, and meters.

Academic Vocabulary	Explanations and Examples
Key Terms ● Inch ● Foot ● Centimeter ● Meter ● Ruler ● Yardstick ● Meterstick ● Measuring tape ● Estimate	Estimation helps develop familiarity with the specific unit of measure being used. To measure the length of a shoe, knowledge of an inch or a centimeter is important so that one can approximate the length in inches or centimeters. Students should begin practicing estimation with items which are familiar to them (length of desk, pencil, favorite book, etc.). Some useful benchmarks for measurement are: ● First joint to the tip of a thumb is about an inch ● Length from your elbow to your wrist is about a foot ● If your arm is held out perpendicular to your body, the length from your nose to the tip of your fingers is about a yard 

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Measure and estimate lengths in standard units.
Standard: 2.MD.4

Connecting Standard	Standard/Learning Outcome:	Connecting Standard
2.MD.A.3	CCSS.MATH.CONTENT.2.MD.A.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.	**2.MD.B.5**

Mathematical Practices
2.MP.5. Use appropriate tools strategically. 2.MP.6. Attend to precision.

Guiding Questions	
● Why is it important to use the same unit when measuring to compare two objects?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Name standard length units.	● Compare lengths of two objects. ● Determine how much longer one object is than another in standard length units.

Academic Vocabulary	Explanations and Examples
Key Terms ● About ● A little less than ● A little more than ● Longer ● Shorter ● Inch ● Foot ● Centimeter ● Meter ● Ruler ● Yardstick ● Meterstick ● Measuring tape	Second graders should be familiar enough with inches, feet, yards, centimeters, and meters to be able to compare the differences in lengths of two objects. They can make direct comparisons by measuring the difference in length between two objects by laying them side by side and selecting an appropriate standard length unit of measure. Students should use comparative phrases such as “It is longer by 2 inches” or “It is shorter by 5 centimeters” to describe the difference between two objects. An interactive whiteboard or document camera may be used to help students develop and demonstrate their thinking.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Relate addition and subtraction to length.
Standard: 2.MD.5

Connecting Standard	Standard/Learning Outcome:	Connecting Standard
2.MD.A.4	CCSS.MATH.CONTENT.2.MD.B.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.	

Mathematical Practices
2.MP.1. Make sense of problems and persevere in solving them. 2.MP.2. Reason abstractly and quantitatively. 2.MP.4. Model with mathematics. 2.MP.5. Use appropriate tools strategically. 2.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions
● What strategy will help me solve this problem the best? ● How can knowing some of the lengths in the problem help me nd the unknown length? ● How can I represent this problem? ● Why do I need to units in the problem to be the same?

KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Add and subtract lengths within 100. ● Recognize the size of inches, feet, centimeters, and meters.	● Solve word problems involving lengths that are given in the same units. ● Solve word problems involving length that have equations with a symbol for the unknown number.

Academic Vocabulary	**Explanations and Examples**
Key Terms ● Inch ● Foot ● Centimeter ● Meter ● Ruler ● Yardstick ● Meterstick	Students need experience working with addition and subtraction to solve word problems which include measures of length. It is important that word problems stay within the same unit of measure. Counting on and/or counting back on a number line will help tie this concept to previous knowledge. Some representations students can use include drawings, rulers, pictures, and/or physical objects. An interactive whiteboard or document camera may be used to help students develop and demonstrate their thinking. Equations include: ● 20 + 35 = c ● c - 20 = 35 ● c – 35 = 20 ● 20 + b = 55 ● 35 + a = 55 ● 55 = a + 35 ● 55 = 20 + b **Example**: ● A word problem for 5 – n = 2 could be: Mary is making a dress. She has 5 yards of fabric. She uses some of the fabric and has 2 yards left. How many yards did Mary use? There is a strong connection between this standard and demonstrating fluency of addition and subtraction facts. Addition facts through 10 + 10 and the related subtraction facts should be included.

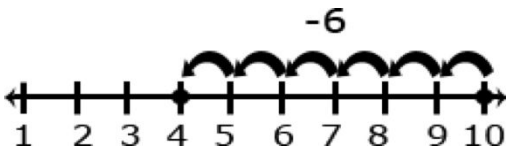
DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Relate addition and subtraction to length.
Standard: 2.MD.6

Connecting Standard	Standard/Learning Outcome:	Connecting Standard
	CCSS.MATH.CONTENT.2.MD.B.6 Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.	**3.NF.A.2**

Mathematical Practices
2.MP.2. Reason abstractly and quantitatively. 2.MP.4. Model with mathematics. 2.MP.5. Use appropriate tools strategically.

Guiding Questions
● How does a number line help me show a number? ● How can I describe numbers on a number line using length? ● Why does using a number line to add and subtract help me understand the sum or difference?

KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Represent whole numbers from 0 on a number line with equally spaced points.	● Explain length as the distance between zero and another mark on the number line diagram. ● Use a number line to represent the solution of whole-number sums and di erences related to length within 100.

Academic Vocabulary	Explanations and Examples
Key Terms ● Equation ● Number line ● Equally spaced ● Point	Students represent their thinking when adding and subtracting within 100 by using a number line. An interactive whiteboard or document camera can be used to help students demonstrate their thinking. Example: 10 – 6 = 4 

Second Grade Supporting Standards

Operations and Algebraic Thinking

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

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

2.OA.C.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.

Measurement and Data

Work with time and money.

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

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

Represent and interpret data.

2.MD.D.9
Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.

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

Geometry

Reason with shapes and their attributes.

2.G.A.1
Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.5 Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.

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

2.G.A.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.