Grade 1 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.

**This project was funded from the nonprofit organization Student Achievement Partners. This organization assembles educators and researchers to design actions based on evidence that will improve student achievement.*

***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

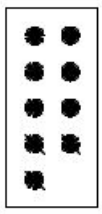
Cluster: Represent and solve problems involving addition and subtraction.

Standard: 1.OA.1

Connecting Standard	Standard/Learning Outcome:	Connecting Standards
K.OA.A.2	CCSS.MATH.CONTENT.1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	**1.OA.A.2** **1.MD.C.4** **2.OA.A.1**

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

Guiding Questions	
● How can I represent this addition or subtraction problem? ● What strategy will help me best to solve this problem? ● Why would another strategy not help me best solve this problem?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Use a symbol for an unknown number in an addition or subtraction problem within 20.	● Interpret situations to solve word problems with unknowns in all positions within 20 using addition and subtraction. ● Determine appropriate representations for solving word problems involving different situations using addition and subtraction within 20. ● Solve word problems within 20 using addition and subtraction.

Academic Vocabulary	Explanations and Examples
Key Terms ● Zero - one hundred twenty (0 - 120)	Contextual problems that are closely connected to students' lives should 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. Students use objects or drawings to represent the different situations. ● Take-from example: Abel has 9 balls. He gave 3 to Susan. How many balls does Abel have now? 

	● Compare example: Abel has 9 balls. Susan has 3 balls. How many more balls does Abel have than Susan? A student will use 9 objects to represent Abel's 9 balls and 3 objects to represent Susan's 3 balls. Then they will compare the 2 sets of objects. Note that even though the modeling of the two problems above is different, the equation, 9 - 3 = ?, can represent both situations yet the compare example can also be represented by 3 + ? = 9 (How many more do I need to make 9?) It is important to attend to the difficulty level of the problem situations in relation to the position of the unknown. ● Result Unknown problems are the least complex for students followed by Total Unknown and Difference Unknown. ● The next level of difficulty includes Change Unknown, Addend Unknown, followed by Bigger Unknown. ● The most difficult are Start Unknown, Both Addends Unknown, and Smaller Unknown. Students may use document cameras to display their combining or separating strategies. This gives them the opportunity to communicate and justify their thinking.

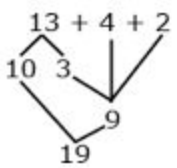
DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Represent and solve problems involving addition and subtraction.
Standard: 1.OA.2

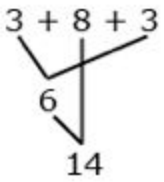
Connecting Standard	Standard/Learning Outcome:	Connecting Standard
1.OA.A.1	CCSS.MATH.CONTENT.1.OA.A.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	**1.MD.C.4**

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

Guiding Questions
● How can I represent this addition or subtraction problem? ● What strategy will help me best to solve this problem? ● Why would another strategy not help me best solve this problem?

KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Know how to add three whole numbers whose sum is less than or equal to 20.	● Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20.

Academic Vocabulary	Explanations and Examples
Key Terms ● Zero - one hundred twenty (0 - 120)	To further students' understanding of the concept of addition, students create word problems with three addends. They can also increase their estimation skills by creating problems in which the sum is less than 5, 10 or 20. They use properties of operations and different strategies to find the sum of three whole numbers such as: ● Counting on and counting on again (e.g., to add 3 + 2 + 4 a student writes 3 + 2 + 4 = ? and thinks, "3, 4, 5, that's 2 more, 6, 7, 8, 9 that's 4 more so 3 + 2 + 4 = 9." ● Making tens (e.g., 4 + 8 + 6 = 4 + 6 + 8 = 10 + 8 = 18) ● Using "plus 10, minus 1" to add 9 (e.g., 3 + 9 + 6 A student thinks, "9 is close to 10 so I am going to add 10 plus 3 plus 6 which gives me 19. Since I added 1 too many, I need to take 1 away so the answer is 18.) ● Decomposing numbers between 10 and 20 into 1 ten plus some ones to facilitate adding the ones 

	● Using doubles  Students will use different strategies to add the 6 and 8. ● Using near doubles (e.g.,5 + 6 + 3 = 5 + 5 + 1 + 3 = 10 + 4 =14) Students may use document cameras to display their combining strategies. This gives them the opportunity to communicate and justify their thinking.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics

Cluster: Understand and apply properties of operations and the relationship between addition and subtraction.

Standard: 1.OA.3

Connecting Standard	Standard/Learning Outcome:	Connecting Standards
K.OA.A.2	CCSS.MATH.CONTENT.1.OA.B.3 Apply properties of operations as strategies to add and subtract.2 *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)*.	**1.OA.C.6** **2.NBT.B.9** **4.NF.B.3** **6.EE.A.3** **6.EE.A.4**

Mathematical Practices
1.MP.1. Make sense of problems and persevere in solving them. 1.MP.7. Look for and make use of structure. 1.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions	
● What is another way to show this addition problem? ● How can solving a problem a different way make it easier to do?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Define properties of operation strategies.	● Show that adding zero to any number does not change the number. ● Show that changing the order of the addends does not change the answer. ● Show when adding three numbers in any order, the answer does not change. ● Use strategies to add and subtract.

Academic Vocabulary	Explanations and Examples
Key Terms ● Addend ● Order ● First ● Second	Students should understand the important ideas of the following properties: ● Identity property of addition (e.g., 6 = 6 + 0) ● Identity property of subtraction (e.g., 9 – 0 = 9) ● Commutative property of addition (e.g., 4 + 5 = 5 + 4) ● Associative property of addition (e.g., 3 + 9 + 1 = 3 + 10 = 13) Students need several experiences investigating whether the commutative property works with subtraction. The intent is not for students to experiment with negative numbers but only to recognize that taking 5 from 8 is not the same as taking 8 from 5. Students should recognize that they will be working with numbers later on that will allow them to subtract larger numbers from smaller numbers. However, in first grade we do not work with negative numbers.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics

Cluster: Understand and apply properties of operations and the relationship between addition and subtraction.

Standard: 1.OA.4

Connecting Standard	Standard/Learning Outcome:	Connecting Standards
K.OA.A.2	CCSS.MATH.CONTENT.1.OA.B.4 Understand subtraction as an unknown-addend problem. For example, subtract 10 - 8 by finding the number that makes 10 when added to 8.	**1.OA.C.6** **2.NBT.B.9** **3.NBT.A.2** **4.NF.B.3**

Mathematical Practices
1.MP.1. Make sense of problems and persevere in solving them. 1.MP.7. Look for and make use of structure. 1.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions	
● What is another way to show this subtraction problem? ● How can addition help me to solve this subtraction problem?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Identify the unknown in a subtraction problem.	● Solve subtraction problems to find the missing addend. ● Explain the relationship of addition and subtraction.

Academic Vocabulary	Explanations and Examples
Key Terms ● Subtraction	When determining the answer to a subtraction problem, 12 – 5, students think, “If I have 5, how many more do I need to make 12?” Encouraging students to record this symbolically, 5 + ? = 12, will develop their understanding of the relationship between addition and subtraction. Some strategies they may use are counting objects, creating drawings, counting up, using number lines or 10 frames to determine an answer.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Add and subtract within 20.
Standard: 1.OA.5

Connecting Standard	Standard/Learning Outcome:	Connecting Standard
K.CC.B.4	CCSS.MATH.CONTENT.1.OA.C.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).	**1.OA.C.6**

Mathematical Practices
1.MP.7. Look for and make use of structure. 1.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions	
● Why does counting help me add and subtract?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Know how to count on and count back within 20.	● Explain how counting on and counting back relate to addition and subtraction.

Academic Vocabulary	Explanations and Examples
Key Terms ● Counting On ● Counting Back ● Subtraction ● Addition	Students' multiple experiences with counting may hinder their understanding of counting on and counting back as connected to addition and subtraction. To help them make these connections when students count on 3 from 4, they should write this as 4 + 3 = 7. When students count back (3) from 7, they should connect this to 7 – 3 = 4. Students often have difficulty knowing where to begin their count when counting backward.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Add and subtract within 20.
Standard: 1.OA.6

Connecting Standards	Standard/Learning Outcome:	Connecting Standards
K.OA.A.2 **K.OA.A.3** **K.OA.A.4** **K.OA.A.5** **1.OA.B.3** **1.OA.B.4** **1.OA.C.5**	CCSS.MATH.CONTENT.1.OA.C.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 - 4 = 13 - 3 - 1 = 10 - 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 - 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).	**1.NBT.C.4** **2.OA.B.2**

Mathematical Practices
1.MP.2. Reason abstractly and quantitatively. 1.MP.7. Look for and make use of structure. 1.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions	
● How can math facts help me solve problems? ● Which strategy will help me solve the problem the best?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Add fluently within 20. ● Subtract fluently within 20.	● Apply strategies to add and subtract within 20.

Academic Vocabulary	Explanations and Examples
Key Terms ● Strategy	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 10 and having experiences adding and subtracting within 20. By studying patterns and relationships in addition facts and relating addition and subtraction, students build a foundation for fluency with addition and subtraction facts. 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. The use of objects, diagrams, or interactive whiteboards and various strategies will help students develop fluency.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Work with addition and subtraction equations.
Standard: 1.OA.7

Connecting Standard	Standard/Learning Outcome:	Connecting Standards
	CCSS.MATH.CONTENT.1.OA.D.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 - 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.	**1.OA.D.8** **2.OA.C.3** **2.OA.C.4**

Mathematical Practices
1.MP.2. Reason abstractly and quantitatively. 1.MP.3. Construct viable arguments and critique the reasoning of others. 1.MP.6. Attend to precision. 1.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions	
● How can numbers be equal?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Explain the meaning of an equal sign (the quantity on each side of the equality symbol is the same).	● Compare the values on each side of an equal sign. ● Determine if an equation is true or false.

Academic Vocabulary	Explanations and Examples
Key Terms ● Equations ● Equal ● The same amount/quantity as ● True ● False	Interchanging the language of “equal to” and “the same as” as well as “not equal to” and “not the same as” will help students grasp the meaning of the equal sign. Students should understand that “equality” means “the same quantity as”. In order for students to avoid the common pitfall that the equal sign means “to do something” or that the equal sign means “the answer is,” they need to be able to: ● Express their understanding of the meaning of the equal sign ● Accept sentences other than a + b = c as true (a = a, c = a + b, a = a + 0, a + b = b + a) ● Know that the equal sign represents a relationship between two equal quantities ● Compare expressions without calculating These key skills are hierarchical in nature and need to be developed over time. Experiences determining if equations are true or false help students develop these skills. Initially, students develop an understanding of the meaning of equality using models. However, the goal is for students to reason at a more abstract level. At all times students should justify their answers, make conjectures (e.g., if you add a number and then subtract that same number, you always get zero), and make estimations. Once students have a solid foundation of the key skills listed above, they can begin to rewrite true/false statements using the symbols, < and >.

	Examples of true and false statements: ● 7 = 8 – 1 ● 8 = 8 ● 1 + 1 + 3 =7 ● 4 + 3 = 3 + 4 ● 6 – 1 = 1 – 6 ● 12 + 2 – 2 = 12 ● 9 + 3 = 10 ● 5 + 3 = 10 – 2 ● 3 + 4 + 5 = 3 + 5 + 4 ● 3 + 4 + 5 = 7 + 5 ● 13 = 10 + 4 ● 10 + 9 + 1 = 19 Students can use a clicker (electronic response system) or interactive whiteboard to display their responses to the equations. This gives them the opportunity to communicate and justify their thinking.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Work with addition and subtraction equations.
Standard: 1.OA.8

Connecting Standard	Standard/Learning Outcome:	Connecting Standards
1.OA.D.7	CCSS.MATH.CONTENT.1.OA.D.8 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = _ - 3, 6 + 6 = _.	**4.MD.C.7** **4.NF.B.3**

Mathematical Practices
1.MP.2. Reason abstractly and quantitatively. 1.MP.6. Attend to precision. 1.MP.7. Look for and make use of structure.

Guiding Questions	
● How are two numbers related? ● How can fact families help me solve problems?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Recognize part-part-whole relationships of addition and subtraction equations.	● Determine the unknown whole number in an addition or subtraction equation with three whole numbers.

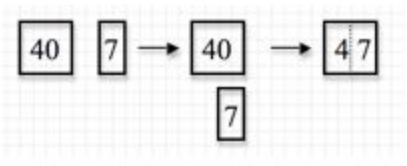
Academic Vocabulary	Explanations and Examples
Key Terms ● Unknown ● Equations ● Fact Family	Students need to understand the meaning of the equal sign and know that the quantity on one side of the equal sign must be the same quantity on the other side of the equal sign. They should be exposed to problems with the unknown in different positions. Having students create word problems for given equations will help them make sense of the equation and develop strategic thinking. Examples of possible student "think-alouds": ● 8 + ? = 11: "8 and some number is the same as 11. 8 and 2 is 10 and 1 more makes 11. So the answer is 3." ● 5 = ? – 3: "This equation means I had some cookies and I ate 3 of them. Now I have 5. How many cookies did I have to start with? Since I have 5 left and I ate 3, I know I started with 8 because I count on from 5. . . 6, 7, 8." Students may use a document camera or interactive whiteboard to display their combining or separating strategies for solving the equations. This gives them the opportunity to communicate and justify their thinking.

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

Connecting Standard	Standard/Learning Outcome:	Connecting Standard
K.CC.A.1	CCSS.MATH.CONTENT.1.NBT.A.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.	**1.NBT.B.2**

Mathematical Practices
1.MP.2. Reason abstractly and quantitatively. 1.MP.7. Look for and make use of structure. 1.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions	
● What does a numeral represent? ● How can I write how many objects are in a set? ● What number can I start counting from?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Recall numbers and numerals up to 120.	● Represent a number of objects up to 120 with a written numeral. ● Count to 120, starting at any number less than 120 ● Read and write numerals up to 120.

Academic Vocabulary	Explanations and Examples
Key Terms ● Number words 0-120	Students use objects, words, and/or symbols to express their understanding of numbers. They extend their counting beyond 100 to count up to 120 by counting by 1s. Some students may begin to count in groups of 10 (while other students may use groups of 2s or 5s to count). Counting in groups of 10 as well as grouping objects into 10 groups of 10 will develop students understanding of place value concepts. Students extend reading and writing numerals beyond 20 to 120. After counting objects, students write the numeral or use numeral cards to represent the number. Given a numeral, students read the numeral, identify the quantity that each digit represents using numeral cards, and count out the given number of objects.  Students should experience counting from different starting points (e.g., start at 83; count to 120). To extend students' understanding of counting, they should be given opportunities to count backwards by ones and tens. They should also investigate patterns in the base 10 system.

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

Connecting Standards	Standard/Learning Outcome:	Connecting Standards
K.NBT.A.1 **1.NBT.A.1**	CCSS.MATH.CONTENT.1.NBT.B.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: CCSS.MATH.CONTENT.1.NBT.B.2.a 10 can be thought of as a bundle of ten ones — called a "ten." CCSS.MATH.CONTENT.1.NBT.B.2.b The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. CCSS.MATH.CONTENT.1.NBT.B.2.c The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).	**1.NBT.B.3** **1.NBT.C.4** **1.NBT.C.5** **1.NBT.C.6** **2.NBT.A.1**

Mathematical Practices	
1.MP.2. Reason abstractly and quantitatively. 1.MP.7. Look for and make use of structure. 1.MP.8. Look for and express regularity in repeated reasoning.	
Guiding Questions	
● How can I group objects to help tell how many? ● Why does grouping objects by ten help me tell how many? ● What does each digit mean in a two-digit number?	
Substandard Deconstruction	**1.NBT.2a 10 can be thought of as a bundle of ten ones — called a "ten."**
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Explain what each digit of a two- digit number represents. ● Define a bundle of 10 ones as a "ten".	
Substandard Deconstruction	**1.NBT.2b The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.**
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
	● Represent numbers 11 to 19 as composed of a ten and correct number of ones.

Substandard Deconstruction	**1.NBT.2c The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).**
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
	• Represent the numbers 20, 30, 40, 50, 60, 70, 80, and 90 as composed of the correct number of tens.

Academic Vocabulary	Explanations and Examples
Key Terms • Tens • Ones • Bundle • Left-overs • Singles • Group	Understanding the concept of 10 is fundamental to children's mathematical development. Students need multiple opportunities counting 10 objects and "bundling" them into one group of ten. They count between 10 and 20 objects and make a bundle of 10 with or without some left over (this will help students who find it difficult to write teen numbers). Finally, students count any number of objects up to 99, making bundles of 10s with or without leftovers. As students are representing the various amounts, it is important that an emphasis is placed on the language associated with the quantity. For example, 53 should be expressed in multiple ways such as 53 ones or 5 groups of ten with 3 ones leftover. When students read numbers, they read them in standard form as well as using place value concepts. For example, 53 should be read as "fifty-three" as well as five tens, 3 ones. Reading 10, 20, 30, 40, 50 as "one ten, 2 tens, 3 tens, etc." helps students see the patterns in the number system. Students may use the document camera or interactive whiteboard to demonstrate their "bundling" of objects. This gives them the opportunity to communicate their counting and thinking.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Understand place value.
Standard: 1.NBT.3

Connecting Standards	Standard/Learning Outcome:	Connecting Standards
K.CC.C.7 **1.NBT.B.2**	CCSS.MATH.CONTENT.1.NBT.B.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.	

Mathematical Practices
1.MP.2. Reason abstractly and quantitatively. 1.MP.6. Attend to precision. 1.MP.7. Look for and make use of structure. 1.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions	
● How can the digits in a two digit number help me tell which number is greater than, less than, or equal to?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Identity the value of each digit represented in a two-digit number. ● Know what each symbol represents >, <, and =.	● Compare two two-digit numbers based on meanings of the tens and ones digits. ● Use >, =, and < symbols to record the results of comparisons.

Academic Vocabulary	Explanations and Examples
Key Terms ● Greater/less than ● Equal to ● Most ● Greatest ● Least	Students use models that represent two sets of numbers. To compare, students first attend to the number of tens, then, if necessary, to the number of ones. Students may also use pictures, number lines, and spoken or written words to compare two numbers. 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.

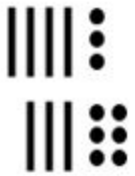
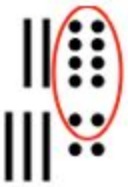
DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Use place value understanding and properties of operations to add and subtract.
Standard: 1.NBT.4

Connecting Standards	Standard/Learning Outcome:	Connecting Standards
1.NBT.B.2 **1.OA.C.6**	CCSS.MATH.CONTENT.1.NBT.C.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, 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 and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.	**2.NBT.B.5** **2.OA.A.1**

Mathematical Practices
1.MP.2. Reason abstractly and quantitatively. 1.MP.3. Construct viable arguments and critique the reasoning of others. 1.MP.4. Model with mathematics. 1.MP.7. Look for and make use of structure. 1.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions	
● What strategy will best help me show this addition or subtraction problem? ● How can grouping objects help me add and subtract?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Identify the value of each digit of a number within 100. ● Decompose any number within one hundred into tens and ones.	● Choose an appropriate strategy for solving an addition problem within 100. ● 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 reasoning used. ● Use composition and decomposition of tens when necessary to add within 100.

Academic Vocabulary	Explanations and Examples
Key Terms ● Tens ● Ones	Students extend their number fact and place value strategies to add within 100. They represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. It is important for students to understand if they are adding a number that has 10s to a number with 10s, they will have more tens than they started with; the same applies to the ones. Also, students should be able to apply their place value skills to decompose numbers. For example, 17 + 12 can be thought of 1 ten and 7 ones plus 1 ten and 2 ones. Numeral cards may help students decompose the numbers into 10s and 1s.

	Students should be exposed to problems both in and out of context and presented in horizontal and vertical forms. As students are solving problems, it is important that they use language associated with proper place value (see example). They should always explain and justify their mathematical thinking both verbally and in a written format. Estimating the solution prior to finding the answer focuses students on the meaning of the operation and helps them attend to the actual quantities. This standard focuses on developing addition - the intent is not to introduce traditional algorithms or rules. Examples: ● 43 + 36 Student counts the 10s (10, 20, 30…70 or 1, 2, 3…7 tens) and then the 1s.  28 +34 Student thinks: 2 tens plus 3 tens is 5 tens or 50. S/he counts the ones and notices there is another 10 plus 2 more. 50 and 10 is 60 plus 2 more or 62.  ● 45 + 18 Student thinks: Four 10s and one 10 are 5 tens or 50. Then 5 and 8 is 5 + 5 + 3 (or 8 + 2 + 3) or 13. 50 and 13 is 6 tens plus 3 more or 63.  29 +14 Student thinks: “29 is almost 30. I added one to 29 to get to 30. 30 and 14 is 44. Since I added one to 29, I have to subtract one so the answer is 43.”

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Use place value understanding and properties of operations to add and subtract.
Standard: 1.NBT.5

Connecting Standard	Standard/Learning Outcome:	Connecting Standards
1.NBT.B.2	CCSS.MATH.CONTENT.1.NBT.C.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.	**2.NBT.B.5** **2.OA.A.1**

Mathematical Practices
1.MP.2. Reason abstractly and quantitatively. 1.MP.3. Construct viable arguments and critique the reasoning of others. 1.MP.7. Look for and make use of structure. 1.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions	
● Why can I find 10 more or 10 less than a number quickly? ● How can finding 10 more or 10 less quickly help me solve problems?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Identify the value of each digit in a number within 100	● Explain how to mentally find 10 more or 10 less than a given two- digit number. ● Apply knowledge of place value to mentally add or subtract 10 to/from a given two-digit number.

Academic Vocabulary	Explanations and Examples
Key Terms ● Ten more ● Ten less	This standard requires students to understand and apply the concept of 10 which leads to future place value concepts. It is critical for students to do this without counting. Prior use of models such as base ten blocks, number lines, and 100s charts helps facilitate this understanding. It also helps students see the pattern involved when adding or subtracting 10. Examples: ● 10 more than 43 is 53 because 53 is one more 10 than 43 ● 10 less than 43 is 33 because 33 is one 10 less than 43 Students may use interactive versions of models (base ten blocks,100s charts, number lines, etc) to develop prior understanding.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Use place value understanding and properties of operations to add and subtract.
Standard: 1.NBT.6

Connecting Standard	Standard/Learning Outcome:	Connecting Standards
1.NBT.B.2	CCSS.MATH.CONTENT.1.NBT.C.6 Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), 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 and explain the reasoning used.	**2.NBT.C.5** **2.OA.A.1**

Mathematical Practices
1.MP.2. Reason abstractly and quantitatively. 1.MP.3. Construct viable arguments and critique the reasoning of others. 1.MP.4. Model with mathematics. 1.MP.5. Use appropriate tools strategically. 1.MP.7. Look for and make use of structure. 1.MP.8. Look for and express regularity in repeated reasoning.

Guiding Questions	
● How can I easily show a subtraction problem that has only tens? ● Why can I solve this subtraction problem using this strategy?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Identify the value of each digit of a number within 100.	● Subtract multiples of 10 in the range of 10-90 from multiples of 10 in the range of 10-90 (positive or zero differences). ● Choose appropriate strategy (concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction) for solving subtraction problems with multiples of 10. ● Relate the chosen strategy to a written method (equation) and explain the reasoning used.

Academic Vocabulary	Explanations and Examples
Key Terms ● Tens ● Ones	This standard is foundational for future work in subtraction with more complex numbers. Students should have multiple experiences representing numbers that are multiples of 10 (e.g. 90) with models or drawings. Then they subtract multiples of 10 (e.g. 20) using these representations or strategies based on place value. These opportunities develop fluency of addition and subtraction facts and reinforce counting up and back by 10s. Examples: ● 70 - 30: Seven 10s take away three 10s is four 10s ● 80 - 50: 80, 70 (one 10), 60 (two 10s), 50 (three 10s), 40 (four 10s), 30 (five 10s) ● 60 - 40: I know that 4 + 2 is 6 so four 10s + two 10s is six 10s so 60 - 40 is 20 Students may use interactive versions of models (base ten blocks,100s charts, number lines, etc.) to demonstrate and justify their thinking.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Measure lengths indirectly and by iterating length units.
Standard: 1.MD.1

Connecting Standard	Standard/Learning Outcome:	Connecting Standard
K.MD.A.2	CCSS.MATH.CONTENT.1.MD.A.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.	**1.MD.A.2**

Mathematical Practices
1.MP.6. Attend to precision. 1.MP.7. Look for and make use of structure.

Guiding Questions	
● What can I tell about these objects' lengths? ● Why do I know an object is longer or shorter than another object?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Identify the measurement known as the length of an object. ● Directly compare the length of three objects.	● Order three objects by length. ● Compare the lengths of two objects indirectly by using a third object.

Academic Vocabulary	Explanations and Examples
Key Terms ● Measure ● Order ● Length ● Height ● More ● Less	In order for students to be able to compare objects, students need to understand that length is measured from one end point to another end point. They determine which of two objects is longer, by physically aligning the objects. Typical language of length includes taller, shorter, longer, and higher. When students use bigger or smaller as a comparison, they should explain what they mean by the word. Some objects may have more than one measurement of length, so students identify the length they are measuring. Both the length and the width of an object are measurements of length. Examples for ordering: ● Order three students by their height ● Order pencils, crayons, and/or markers by length ● Build three towers (with cubes) and order them from shortest to tallest ● Three students each draw one line, then order the lines from longest to shortest Example for comparing indirectly: ● Two students each make a dough "snake." Given a tower of cubes, each student compares his/her snake to the tower. Then students make statements such as, "My snake is longer than the cube tower and your snake is shorter than the cube tower. So, my snake is longer than your snake." Students may use interactive whiteboard or document camera to demonstrate and justify comparisons.

DECONSTRUCTED PRIORITY CCSS STANDARDS: Mathematics
Cluster: Measure lengths indirectly and by iterating length units.
Standard: 1.MD.2

Connecting Standard	Standard/Learning Outcome:	Connecting Standard
1.MD.A.1	CCSS.MATH.CONTENT.1.MD.A.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.	**2.MD.A.1**

Mathematical Practices
1.MP.5. Use appropriate tools strategically. 1.MP.6. Attend to precision. 1.MP.7. Look for and make use of structure.

Guiding Questions	
● Why does measuring an object help me tell about its length? ● How can I represent an object's length?	
KNOW (Essential Concept)	**DO (Learning Targets/Essential Skills)**
● Know to use the same size non- standard objects as repeating units. ● Know that length can be measured with various units.	● Compare a smaller unit of measurement to a larger object. ● Determine the length of a measured object to be the number of smaller iterated or repeated objects that equal its length. ● Demonstrate the measurement of an object using non-standard units by laying the units of measurement end to end with no gaps or overlaps.

Academic Vocabulary	Explanations and Examples
Key Terms ● Measure ● Order ● First ● Second ● Third ● Gap ● Overlap ● About ● A little less than ● A little more than	In order for students to be able to compare objects, students need to understand that length is measured from one end point to another end point. They determine which of two objects is longer, by physically aligning the objects. Typical language of length includes taller, shorter, longer, and higher. When students use bigger or smaller as a comparison, they should explain what they mean by the word. Some objects may have more than one measurement of length, so students identify the length they are measuring. Both the length and the width of an object are measurements of length. Examples for ordering: ● Order three students by their height ● Order pencils, crayons, and/or markers by length ● Build three towers (with cubes) and order them from shortest to tallest ● Three students each draw one line, then order the lines from longest to shortest

	Example for comparing indirectly: ● Two students each make a dough “snake.” Given a tower of cubes, each student compares his/her snake to the tower. Then students make statements such as, “My snake is longer than the cube tower and your snake is shorter than the cube tower. So, my snake is longer than your snake.” Students may use interactive whiteboard or document camera to demonstrate and justify comparisons.

First Grade Supporting Standards

Measurement and Data

Tell and write time.

1.MD.B.3
Tell and write time in hours and half-hours using analog and digital clocks.

Represent and interpret data.

1.MD.C.4
Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Geometry

Reason with shapes and their attributes.

1.G.A.1
Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.

1.G.A.2
Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.

1.G.A.3
Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.