Topic C

Addition to 100 Using Place Value Understanding

1.NBT.4, 1.NBT.6

Focus Standards:	1.NBT.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.
	1.NBT.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.
Instructional Days:	8	
Coherence -Links from:	G1–M4	Place Value, Comparison, Addition and Subtraction to 40
-Links to:	G2–M3	Place Value, Counting, and Comparison of Numbers to 1,000

During Topic C, students apply all of their place value and Level 3 strategy knowledge to add pairs of two-digit numbers to sums within 100. To this point, students have only added pairs of two-digit numbers within 40. They now extend their skills and strategies to larger pairs, such as 36 + 57, using all of the same methods.

Lesson 10 focuses students on number work with tens as they add and subtract multiples of 10 from multiples of 10. Students see that 20 + 70 is the same as 2 tens + 7 tens and that 80 – 50 is the same as 8 tens – 5 tens (**1.NBT.4**, **1.NBT.6**).

Building from student work with multiples of 10, Lesson 11 scaffolds students to add a multiple of 10 to any two-digit number, such as 64 + 30 (**1.NBT.4**). While some students may initially apply their ability to mentally add 10 by counting on by tens (64, 74, 84, 94), students also decompose 64 into 60 and 4 to solve, as shown to the right.

64 + 30 = 94
4   60
60 + 30 = 90
90 + 4 = 94

In Lesson 12, students add a pair of two-digit numbers when the ones digits have a sum less than or equal to 10 (**1.NBT.4**). They continue using strategies developed in Module 4. For example, when adding 47 + 23, students may choose to decompose the second addend into 20 and 3. They then add 20 to 47, making 67, and then add the remaining ones. Other students may choose to add the ones to the first addend and then add on the remaining tens, as shown to the right.

$$47 + 23 = 70$$
$$20 \quad 3$$
$$47 + 20 = 67$$
$$67 + 3 = 70$$

$$47 + 23 = 70$$
$$3 \quad 20$$
$$47 + 3 = 50$$
$$50 + 20 = 70$$

Lessons 13 and 14 focus on the most challenging addition work of this grade level as students add a pair of two-digit numbers when the ones digits have a sum greater than 10, as shown to the right (**1.NBT.4**).

$$49 + 25 = 74$$
$$20 \quad 5$$
$$49 + 20 = 69$$
$$69 + 5 = 74$$
$$1 \quad 4$$

$$49 + 25 = 74$$
$$1 \quad 24$$
$$49 + 1 = 50$$
$$50 + 24 = 74$$
$$20 \quad 4$$

During Lesson 15, students see how they can align materials or drawings to more distinctly separate and add tens with tens and ones with ones, recording the total below the drawings. Students connect this work with their decomposition work from Lessons 10 and 11, as shown to the right.

$$36 + 57 = 93$$

$$\begin{array}{r} 36 \\ +57 \\ \hline 93 \end{array}$$

$$93$$

Lesson 16 extends this work, having students add a pair of two-digit numbers, such as 36 + 57, recording the 13 as 1 ten 3 ones as a part of their written method for recording their process. During Lesson 17, students continue to strengthen their skills and strategies to solve double-digit addition problems (**1.NBT.4**).

A Teaching Sequence Toward Mastery of Addition to 100 Using Place Value Understanding

Objective 1: Add and subtract multiples of 10 from multiples of 10 to 100, including dimes.
(Lesson 10)

Objective 2: Add a multiple of 10 to any two-digit number within 100.
(Lesson 11)

Objective 3: Add a pair of two-digit numbers when the ones digits have a sum less than or equal to 10.
(Lesson 12)

Objective 4: Add a pair of two-digit numbers when the ones digits have a sum greater than 10 using decomposition.
(Lessons 13–14)

Objective 5: Add a pair of two-digit numbers when the ones digits have a sum greater than 10 with drawing. Record the total below.
(Lesson 15)

Objective 6: Add a pair of two-digit numbers when the ones digits have a sum greater than 10 with drawing. Record the new ten below.
(Lessons 16–17)