Lesson 3

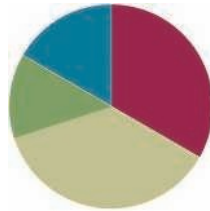## Objective: Add and subtract like units.

Suggested Lesson Structure

■ Fluency Practice   (15 minutes)
■ Concept Development   (20 minutes)
■ Application Problem   (15 minutes)
■ Student Debrief   (10 minutes)
   Total Time   **(60 minutes)**

Fluency Practice (15 minutes)

▪ Sprint: Related Facts **2.4A, 2.4B**   (15 minutes)

Sprint: Related Facts (15 minutes)

Materials: (S) Related Facts Sprint

Note: Students use their fluency with easier problems to solve more complex addition and subtraction problems within 100. Also, as students get better with the Sprint routine, the time allotted for the Sprint continues to decrease.

Concept Development (20 minutes)

Materials: (S) Personal white board

Part 1: Add and subtract like units, ones, to solve problems within 100 (e.g., 5 + 2, 45 + 2, 7 − 2, 47 − 2).

T: What did you notice about today's Sprint?

S: I noticed a pattern. I saw 3 + 1 in the first 3 problems.
      → 3 + 1 = 4. So, I also know that 13 + 1 = 14 and
      23 + 1 = 24. → I kept adding the same ones together
      in the first 3 problems, 3 + 1 = 4. But the tens changed.

T: Yes! Today's Sprint was filled with patterns. You can
      use easier facts like 3 + 1 to solve other problems like
      13 + 1 and 23 + 1.

T: Turn and talk to your partner about other patterns you
      see in the Sprint.

> **NOTES ON MULTIPLE MEANS OF REPRESENTATION:**
>
> Consider demonstrating on the 100-bead Rekenrek for students who would benefit from a concrete model of the problems.

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> Make sure English language learners understand the term pattern so they can participate in the discussion of patterns on the Sprint. Show examples of patterns and non-patterns so that when asked if anyone noticed a pattern, they can answer.

Lesson 3:   Add and subtract like units.

S: (Identify sequences of problems.)

T: (Draw an image of 5 circles and 2 Xs as shown to the right.)
     Say addition and subtraction sentences this drawing represents.

S: 5 + 2 = 7. → 2 + 5 = 7. → 7 − 5 = 2. → 7 − 2 = 5.

T: Just like in our Sprint today, we can use problems like
     5 + 2 = 7 or 7 − 2 = 5 to solve other problems. (Write
     5 + 2 = 7 and 7 − 2 = 5. Add 4 quick tens to the drawing.)

T: 45 + 2 is…?

S: 47.

T: (Write 45 + 2 = 47.)

T: 47 − 2 is…?

S: 45.

T: (Write 47 − 2 = 45.)

T: What easier problem did you use to add and to subtract?

S: 5 + 2 = 7. → 7 − 2 = 5.

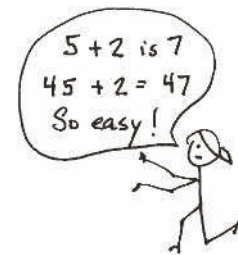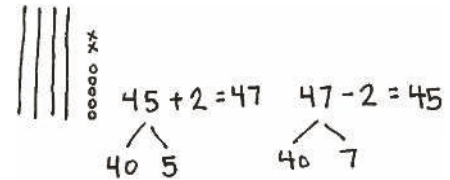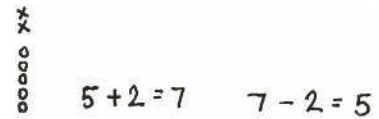T: (Add 2 more quick tens to the drawing.) 67 − 2 is…?

S: 65.

T: (Add subtraction number sentences to the growing list.) What easier problem did we still use to
     subtract the ones?

S: 7 − 2 = 5.

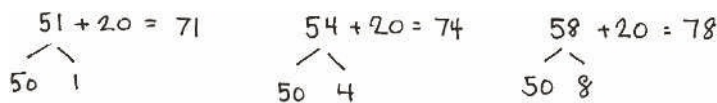T: Tell me the number sentence in unit form.

S: 7 ones − 2 ones = 5 ones.

T: We didn't have to do anything to the tens except remember to put them together with the 5 ones!

Part 2: Add and subtract like units, tens, to solve problems within 100 (e.g., 51 + 20, 54 + 20, 71 − 20, 74 − 20).

T: (Write 51 + 20 on the board.) 51 + 20 is…?

S: 71.

T: How did you know?

S: I added 20 to 50 to get 70 and then added 1. → I drew a quick
     ten drawing. I added 2 more tens to my 5 tens.
     That gave me 7 tens and 1 one.

T: (Write the number bond to break apart 51 into 50 and
     1.) How many tens are in 51?

S: 5 tens.

T: How many tens were we adding to 51?

S: 2 tens.

NOTES ON MULTIPLE MEANS OF ENGAGMENT:

Have students who struggle to see the like units draw quick tens to represent the problems. As soon as possible, have them visualize the quick tens to prevent overdependence on drawing.

"Pretend you drew quick tens. How many do you see? How many do you subtract? How many are left?"

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T: What easier problem did you use to help you solve 51 and 20? Talk to your partner.

S: 5 + 2 = 7. → 5 tens + 2 tens = 7 tens. → 50 + 20 = 70.

Repeat the same reasoning with 54 + 20 and 58 + 20.

T: Compare 54 + 2 to 54 + 20. Talk to your partner.

S: We start with the same number in both problems.
     → In one problem, we add 2 ones. In the other
     problem, we add 2 tens. → Adding 2 ones is not the
     same as adding 2 tens. 56 is much less than 74. →
     In one problem, we leave the ones alone, and in the
     other problem, we leave the tens alone.
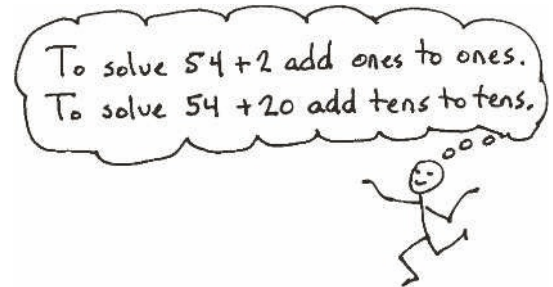
T: (Write 71 – 20.) Break apart 71 as tens and ones.

S: 70 and 1.

T: (Write the number bond for 71.) What is 71 – 20?

S: 51.

T: How did you know?

S: 7 tens – 2 tens = 5 tens. → I took tens from tens. 70 – 20 = 50. Then I added 1. → I used an easier
     problem. I know 7 – 2 = 5, so 70 – 20 = 50.

Repeat the same reasoning with 73 – 20 and 76 – 20 and record.

T: Compare 73 – 20 to 73 – 2. Talk to your partner.

S: (Compare as previously.)

Repeat the process using the following sequence: 56 – 30, 56 – 3, 65 + 30, 35 + 60, 35 – 20, 35 – 30, 35 + 2,
32 + 5, 37 – 5, 87 – 5, 87 – 50. After each problem, ask students to share the easier problem that helped
them solve. Ask students to identify if they are adding or subtracting tens or ones.

Application Problem (15 minutes)

Note: This Application Problem follows the Concept Development to allow students to apply their
understanding to a *take from result unknown* problem. The allotted time period includes 5 minutes to solve
the Application Problem and 10 minutes to complete the Problem Set.

The teacher has 48 folders. She gives 6 folders to the first table. How many folders does she have now?
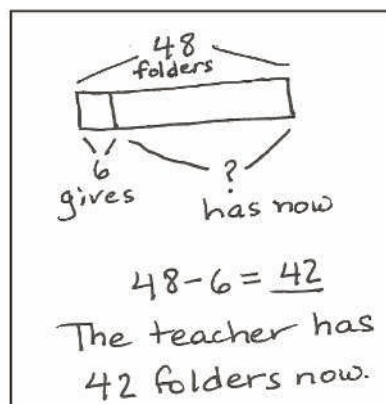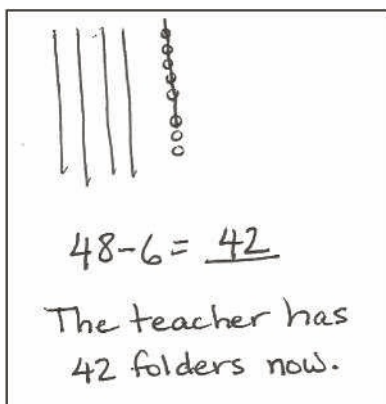
**NOTES ON
MULTIPLE MEANS
OF REPRESENTATION:**

Rather than suggesting a strategy,
choose to share two different solution
strategies from students. Notice that
the drawings represent student work
at varying levels of sophistication. When
sharing, encourage students to make
connections between the models.

Lesson 3:   Add and subtract like units.

Note: This is the first application problem of Grade 2. The goal is to encourage all students to draw and solve using the RDW process. Some students may simply know the answer, so it is important to establish the purpose of the Application Problem of each lesson. It is the time to focus on understanding the situation presented in the problem and representing that situation with a drawing, a number sentence, and a statement of the answer. It is also the time for students to share their representations and their ways of thinking, which can help more students access problem-solving strategies. Save the strip diagram from this Application Problem to compare it to the strip diagram from Lesson 4 where students combine the parts rather than subtract a part.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. Some problems do not specify a method for solving. Students should solve these problems using the RDW approach used for Application Problems.

For some classes, it may be appropriate to modify the assignment by specifying which problems students should work on first. With this option, let the purposeful sequencing of the Problem Set guide your selections so that problems continue to be scaffolded. Balance word problems with other problem types to ensure a range of practice. Consider assigning incomplete problems for homework or at another time during the day.
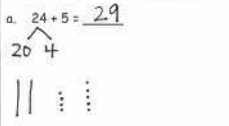
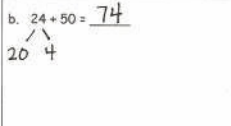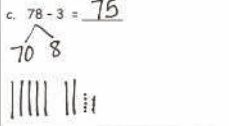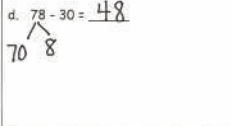## Student Debrief (10 minutes)

Lesson Objective: Add and subtract like units.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- What is another problem that could be added to Problem 1(a)?
- Compare 24 + 5 to 24 + 50 with your partner. What's different?
- Share your explanation from Problem 4. What is another pair of addition sentences that has this same relationship?
- Do you think you could teach what you learned to someone else? How?
- Can you figure out the math goal of today's lesson? What name would you give this lesson?

Lesson 3:   Add and subtract like units.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

3. Solve.

a.
$38 + 10 = 48$

$18 + 30 = 48$

b.
$35 - 10 = 25$

$35 - 20 = 15$

c.
$56 + 40 = 96$

$46 + 50 = 96$

d.
$75 - 40 = 35$

$75 - 30 = 45$

4. Compare 57 – 2 to 57 – 20. How are they different? Use words, drawings, or numbers to explain.

$57 - 2 = 55$ |||||⋮ | Take away 2 ones.

$57 - 20 = 37$ ||||⫣⋮ : Take away 2 tens.

Extension!

5. Andy had $28. He spent $5 on a book.
Lisa had $20 and got $3 more.
Lisa says she has more money.
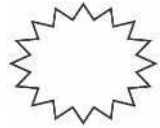Prove her right or wrong using pictures, numbers or words.

$28 - 5 = 23$
$20 + 3 = 23$

Lisa is wrong. They have the same amount of money.

A

Number Correct: _____

Name _____ Date _____

*Write the missing number. Pay attention to the + and – signs.

1.	$3 + 1 = \underline{}$	16.	$6 + 2 = \underline{}$
2.	$13 + 1 = \underline{}$	17.	$56 + 2 = \underline{}$
3.	$23 + 1 = \underline{}$	18.	$7 + 2 = \underline{}$
4.	$1 + 2 = \underline{}$	19.	$67 + 2 = \underline{}$
5.	$11 + 2 = \underline{}$	20.	$87 + 2 = \underline{}$
6.	$21 + 2 = \underline{}$	21.	$7 - 2 = \underline{}$
7.	$31 + 2 = \underline{}$	22.	$47 - 2 = \underline{}$
8.	$61 + 2 = \underline{}$	23.	$67 - 2 = \underline{}$
9.	$4 - 1 = \underline{}$	24.	$26 + 3 = \underline{}$
10.	$14 - 1 = \underline{}$	25.	$56 + \underline{} = 59$
11.	$24 - 1 = \underline{}$	26.	$\underline{} + 3 = 76$
12.	$54 - 1 = \underline{}$	27.	$57 - \underline{} = 54$
13.	$5 - 3 = \underline{}$	28.	$77 - \underline{} = 74$
14.	$15 - 3 = \underline{}$	29.	$\underline{} - 4 = 73$
15.	$25 - 3 = \underline{}$	30.	$\underline{} - 4 = 93$

Lesson 3:   Add and subtract like units.

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B

Number Correct: ____
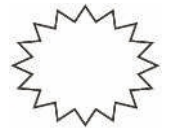
Name _____   Date _____

*Write the missing number. Pay attention to the + and – signs.

1.	2 + 1 = ___	16.	7 + 2 = ___
2.	12 + 1 = ___	17.	67 + 2 = ___
3.	22 + 1 = ___	18.	4 + 5 = ___
4.	3 + 2 = ___	19.	54 + 5 = ___
5.	13 + 2 = ___	20.	84 + 5 = ___
6.	23 + 2 = ___	21.	8 – 6 = ___
7.	43 + 2 = ___	22.	48 – 6 = ___
8..	63 + 2 = ___	23.	78 – 6 = ___
9.	5 – 1 = ___	24.	33 + 4 = ___
10.	15 – 1 = ___	25.	63 + ___ = 67
11.	25 – 1 = ___	26.	___ + 3 = 77
12.	45 – 1 = ___	27.	59 – ___ = 56
13.	5 – 4 = ___	28.	79 – ___ = 76
14.	15 – 4 = ___	29.	___ – 6 = 73
15.	25 – 4 = ___	30.	___ – 6 = 93

Lesson 3:   Add and subtract like units.

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Name _____ Date _____

1. Solve.

a. 30 + 6 = _____   b. 50 – 30 = _____

    30 + 60 = _____   51 – 30 = _____

    35 + 40 = _____   57 – 4 = _____

    35 + 4 = _____   57 – 40 = _____

2. Solve.

a. 24 + 5 = _____	b. 24 + 50 = _____
c. 78 – 3 = _____	d. 78 – 30 = _____

Lesson 3:   Add and subtract like units.

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3. Solve.

a. 38 + 10 = _____ 18 + 30 = _____	b. 35 – 10 = _____ 35 – 20 = _____
c. 56 + 40 = _____ 46 + 50 = _____	d. 75 – 40 = _____ 75 – 30 = _____

4. Compare 57 – 2 to 57 – 20. How are they different? Use words, drawings, or numbers to explain.

Extension!

5. Andy had $28. He spent $5 on a book.

Lisa had $20 and got $3 more.

Lisa says she has more money.

Prove her right or wrong using pictures, numbers, or words.

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Name _____   Date _____

Solve.

1. 23 + 5 = _____	2. 68 – 5 = _____
3. 43 + 30 = _____	4. 76 – 60 = _____

Lesson 3:   Add and subtract like units.