

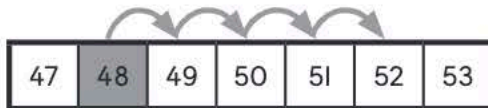
ADDITION AND SUBTRACTION WITHIN 100

Chapter Overview

In this chapter, your student's foundational knowledge from Chapters 5 and 8 will be extended to adding and subtracting within 100 with and without renaming. Your student will:

- count on to add and count back to subtract numbers within 100.

Add 48 and 4.

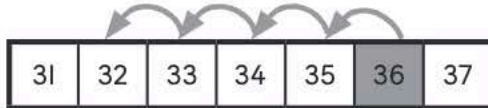


$$48 + 4 = 52$$

Count on 4 steps from 48.



Subtract 4 from 36.



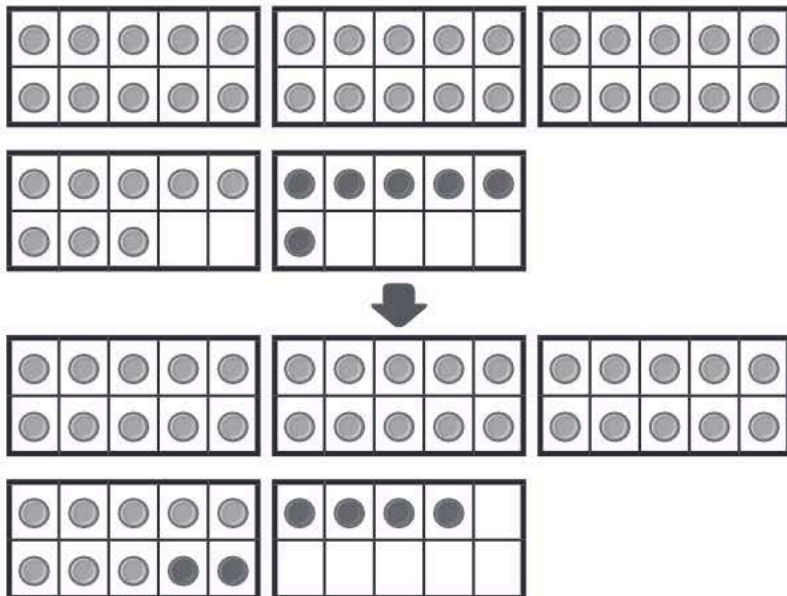
$$36 - 4 = 32$$

Count back 4 steps from 36.

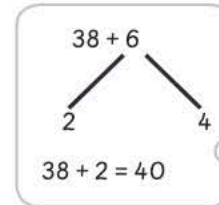


- use **number pairs and number bonds** to add and subtract numbers within 100.

Add 38 and 6.

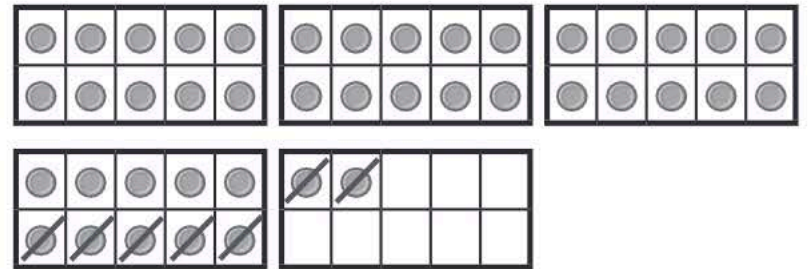


$$38 + 6 = 44$$

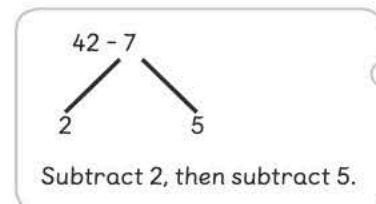


Use ● on  to show $42 - 7$ in different ways.

Way 1

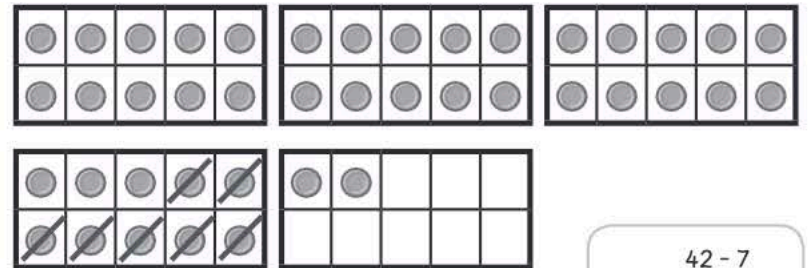
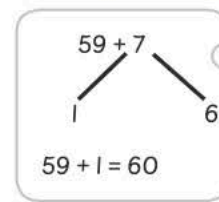


$$42 - 7 = 35$$

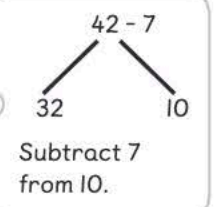


- make or break tens to add and subtract numbers within 100.

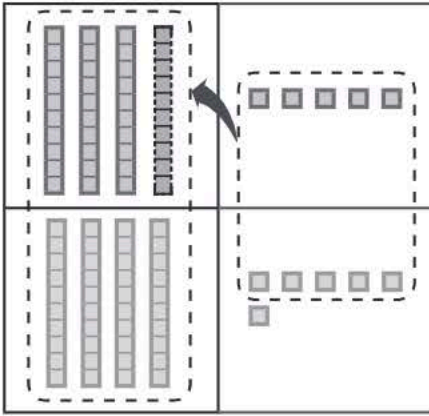
$$59 + 7 = 66$$



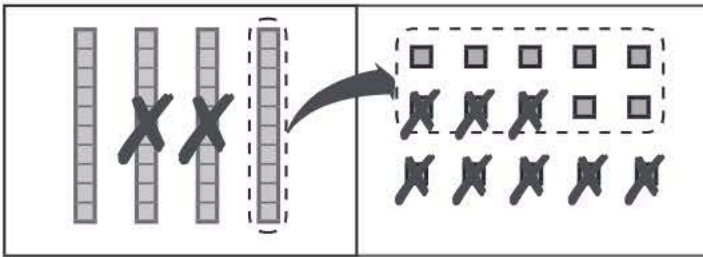
$$42 - 7 = 35$$



- **add and subtract** 2-digit numbers in the ones and tens places **with renaming**.



$$35 + 46 = 81$$



$$45 - 28 = 17$$

- use the **vertical algorithm** to show addition and subtraction within 100.

$$39 + 37 = \underline{76}$$

	T	O
	3	9
+	3	7
	7	6

$$64 - 47 = \underline{17}$$

	T	O
	5	14
	6	4
-	4	7
	1	7

Key Ideas

- We can count on to add ones to numbers within 100.
- We can use number bonds to add ones to numbers within 100.
- We can use addition facts within 20 to add 2-digit and 1-digit numbers within 100.
- We can make tens to add numbers within 100.
- We can add ones to a 2-digit number with and without renaming.
- We can add two 2-digit numbers with and without renaming.
- We can count back to subtract ones from numbers within 100.
- We can use number bonds to subtract ones from numbers within 100.
- We can subtract ones from tens within 100.
- We can break tens to subtract numbers within 100.
- We can subtract ones from a 2-digit number with and without renaming.
- We can subtract tens from a 2-digit number.
- We can subtract a 2-digit number from another 2-digit number with and without renaming.

Materials You Will Need

- magnetic numbers (optional)
- magnetic whiteboard or cookie sheet (optional)
- sidewalk chalk, 3 hula hoops, or shaving cream with food coloring (optional)
- sticky notes
- 1 base-ten set
- 1 set of connecting cubes
- 1 set of counters (two colors)
- 2 dice
- 2 standard 52-card decks (optional)
- Ten Frame (TR01)
- Number Cards (0 to 10) (TR02)
- Number Bonds (TR04)
- Number Cards (11 to 20) (TR13)
- Blank Number Tape (TR16)
- Hundred Chart (TR23)
- Place-Value Chart (TR27)
- Number Cards (21 to 100) (TR28)
- Grid Paper (TR29)
- Addition Cards (TR30)
- Subtraction Cards (TR31)

Chapter at a Glance

Day	Learning Objective(s)	Vocabulary	Resource(s)	Material(s)
1 of 24				<ul style="list-style-type: none"> 1 set of connecting cubes 2 standard 52-card decks (optional) 1 set of Number Cards (0 to 20) (TR02 and TR13) 1 copy of Number Bonds (TR04)
2 of 24	<ul style="list-style-type: none"> Count on to add ones to numbers within 100. Use addition facts within 20 to add numbers within 100. 		<ul style="list-style-type: none"> Additional Practice IB, Exercise 9A (1) Reteach I, Exercise 9A (1) Extension I, Exercise 9A (1) 	<ul style="list-style-type: none"> 1 base-ten set (optional) 1 set of counters (two colors) 4 copies of Ten Frame (TR01) 1 copy of Blank Number Tape (TR16) 1 set of Number Cards (2 to 90) (TR02, TR13, and TR28) (optional)
3 of 24	<ul style="list-style-type: none"> Make tens to add numbers within 100. 		<ul style="list-style-type: none"> Additional Practice IB, Exercise 9A (2) Reteach I, Exercise 9A (2) Extension I, Exercise 9A (2) 	<ul style="list-style-type: none"> sidewalk chalk, 3 hula hoops, or shaving cream with food coloring (optional) 1 set of counters (two colors) 5 copies of Ten Frame (TR01) 1 set of Number Cards (1 to 9 and 21 to 90) (TR02 and TR28) (optional)
4 of 24	<ul style="list-style-type: none"> Add ones to a 2-digit number without renaming. 		<ul style="list-style-type: none"> Additional Practice IB, Exercise 9A (3) Reteach I, Exercise 9A (3) Extension I, Exercise 9A (3) 	<ul style="list-style-type: none"> magnetic numbers (optional) magnetic whiteboard or cookie sheet (optional) 1 base-ten set 2 dice (optional) 1 set of Number Cards (0 to 9) (TR02) (optional) 2 copies of Place-Value Chart (TR27) 2 copies of Grid Paper (TR29)

9A Addition (1)

Learning Objective(s)

- Count on to add ones to numbers within 100.
- Use addition facts within 20 to add numbers within 100.

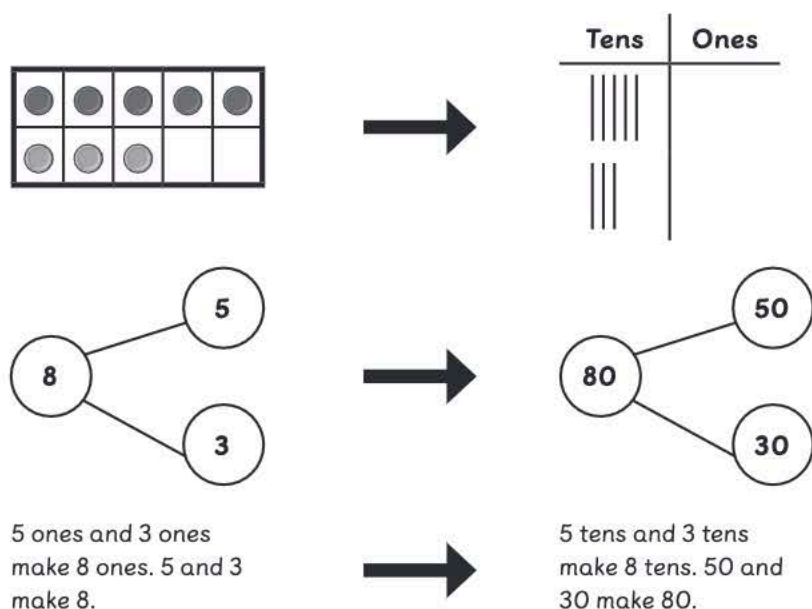
Material(s)

- 1 base-ten set (optional)
- 1 set of counters (two colors)
- 4 copies of Ten Frame (TR01)
- 1 copy of Blank Number Tape (TR16)
- 1 set of Number Cards (2 to 90) (TR02, TR13, and TR28) (optional)

Teaching Tip

This 7-day lesson is all about strategies for addition within 100, including renaming in tens and ones. Keep your student's use of pictorial tools at the forefront, and encourage use of number bonds to support thinking. Number bonds are easy to visualize and draw, and will be used with very large numbers according to place value in later grades. In this lesson, your student will move over one place value from the ones place to the tens place, and begin to extend principles of base ten.

Explaining thinking through drawing helps solidify conceptual foundations. In this chapter, quantifications can be drawn as dots/circles on a ten frame or vertical lines for ten-rods, as shown in the diagram below. Ensure you match your language to the concept.



If your student gravitates toward using concrete representations initially, be vigilant about having him/her draw simple pictorial representations of the base-ten blocks after he/she builds the number, as shown in the table above. This will move thinking into visual understanding and provide a pictorial mental reference that will enable your student to move away from dependence on manipulatives and into the more efficient abstract stage of understanding.

Focus Question

How do you add ones to a 2-digit number?

Invite your student to ponder this question as you go through the lesson. Revisit this question when you reach the end of the lesson to check his/her understanding.

ADD ONES (Student Book, pages 59 and 60)

Lesson Opener

Task (Student Book, page 59)


Show your student the **Lesson Opener** and cover the rest of the page. Discuss the question with your student. Do not show your student how to do the task and allow him/her to discover how many beads there are in all.

Refer your student to **Learn** in the Student Book for reflection after your student has explored the concepts. Use questions to build understanding and direct instruction to refine understanding.


Lesson Development

Learn (Student Book, page 59)


Take care to continue hiding the **Learn** and engage your student in considering what it would look like to add 3 to 20. You may wish to ask these questions:

 **What do you notice about this picture? What is the girl telling us?**
the number of each color of beads How many beads are there in all?
There are 20 red beads and 3 yellow beads. How do you know for sure if she is correct? I can count the beads. What are you asked to find?
how many beads there are in all How might you show it? Are there tools you have used before that could help you figure out how many beads there are in all? connecting cubes; ten frames How might you show it?

Provide your student with counters in two colors and 3 copies of Ten Frame (TRO). Invite your student to model the problem. You may wish to ask these questions:

 **If there are 20 red beads and 3 yellow beads, how many is that in all? 23**
What did you do to figure it out? I showed the problem using counters on ten frames. How might you write an equation for the problem? $20 + 3 = 23$

After your student has explored the concepts in the **Lesson Opener** and **Learn**, you may wish to ask these questions to encourage further reflection:


 **How did the book arrange the counters to find out right away how many beads there are? ten-frame pattern; 20 counters on 2 ten frames and 3 more counters on another ten frame What did the book do to find the answer? added 3 to 20 Is the way the book thought about the problem the same as or different from how you thought about it? Is the addition equation in the book the same as or different from yours? If it is different, what is different? What is the mascot thinking? Is he right? How do you know?**

Learn Answer (Student Book, page 59)


23; There are 23 beads in all.

Lesson Debrief

- Conclude the lesson and facilitate your student's reflection by asking him/her to answer the **Focus Question** and share his/her thinking.
- Extend the discussion by posing the following questions.

 **What are some ways you know to add ones? How would you use counting on to help you add? What if you have a number that is more than 10 but less than 20, and you want to add a number less than ten to it, for example, 13 and 4. How would you add them? What if you have a number greater than 20 and want to add a number less than 10 to it, for example, 23 and 4. How would you add them? Do you think this will work with any number pair greater than 20? Why do you think so, or why don't you think so?**

Reflect and Connect

- Allow time for your student to reflect on what he/she has learned and ask questions about what he/she may be unsure of.
- Encourage him/her to share anything that was confusing or difficult, and how thinking about it differently and perseverance helped the process of learning.
- Ask your student to answer a reflection question or draw a picture to show his/her reflection. You may offer these prompts:
 -  **What is important to know about using number bonds to add? How are number bonds a tool? How do you use counting on when you have to add across a ten, such as $48 + 4$? What is new for you today?**

What to look for:

- an ability to apply the strategies of counting on and decomposing a number into tens and ones to add ones to numbers within 100

Practice On Your Own (Student Book, page 60)

- **QUESTION 1** assesses your student's ability to add ones to numbers within 100. Encourage your student to count on to add only when the addend is small.

Caution

Note the progression in Question 1. When the first addend is the greater number, it is easier to add ones to tens by counting on. When the second addend is the greater number, it is easier to add by breaking apart the greater number, then using the "add the ones then add the tens" strategy. Your student may or may not make these observations.

Practice On Your Own Answers

(Student Book, page 60)

1. (a) 25
(b) 39
(c) 68
(d) 50