5.1 Addition: Two-digit numbers (hundred chart)

In this lesson, students add two two-digit numbers by starting with the greater number and adding the parts of the second addend. They show their thinking on a hundred chart. No example involves bridging.

Step 1 Preparing the lesson

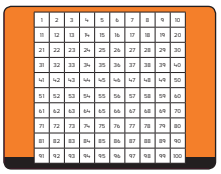
Each pair of students will need:

- hundred chart from *The Number Case*
- 1 transparent counter

Each student will need:

- Student Journal 5.1

Hundred chart



Step 2 Starting the lesson

Organize students into pairs and distribute the resources. One student places a counter on 35. Discuss how moving to the right from a number adds one more and moving down a row adds ten more. Ask, *How many jumps of one do you make to move from 35 to 38?* Repeat for moving from 35 to 55. Then repeat the whole activity with different pairs of numbers.

Step 3 Teaching the lesson

Write the prices $56 and $23 on the board and ask, *What is the total of these two prices? How could you figure it out?* Encourage students to share their ideas, and make reference to the tools they would use, such as base-10 blocks, hundred charts, money, or the fingers of groups of students (**SMP5**). Ask each student to justify their choice of tool.

Explain that one way of figuring out the total is to split one of the numbers into tens and ones, then add each part to the other number (**SMP7**). Have the students place a counter on 56. Discuss the points below:

What number are you going to add to 56? (23.)

How many tens does 23 have? (2.)

2 tens is 20. How can you move your counter to add 20? (Down two rows.)

How many ones does 23 have? (3.)

How can you move your counter to add 3 more? (Right three spaces.)

Have the students move their counter along the row to 79. Review the steps and write the equation 56 + 20 = 76 on the board. Below it write 76 + 3 = 79. Repeat for $43 + $24, then $62 + $37. Leave all the prices and equations on the board.

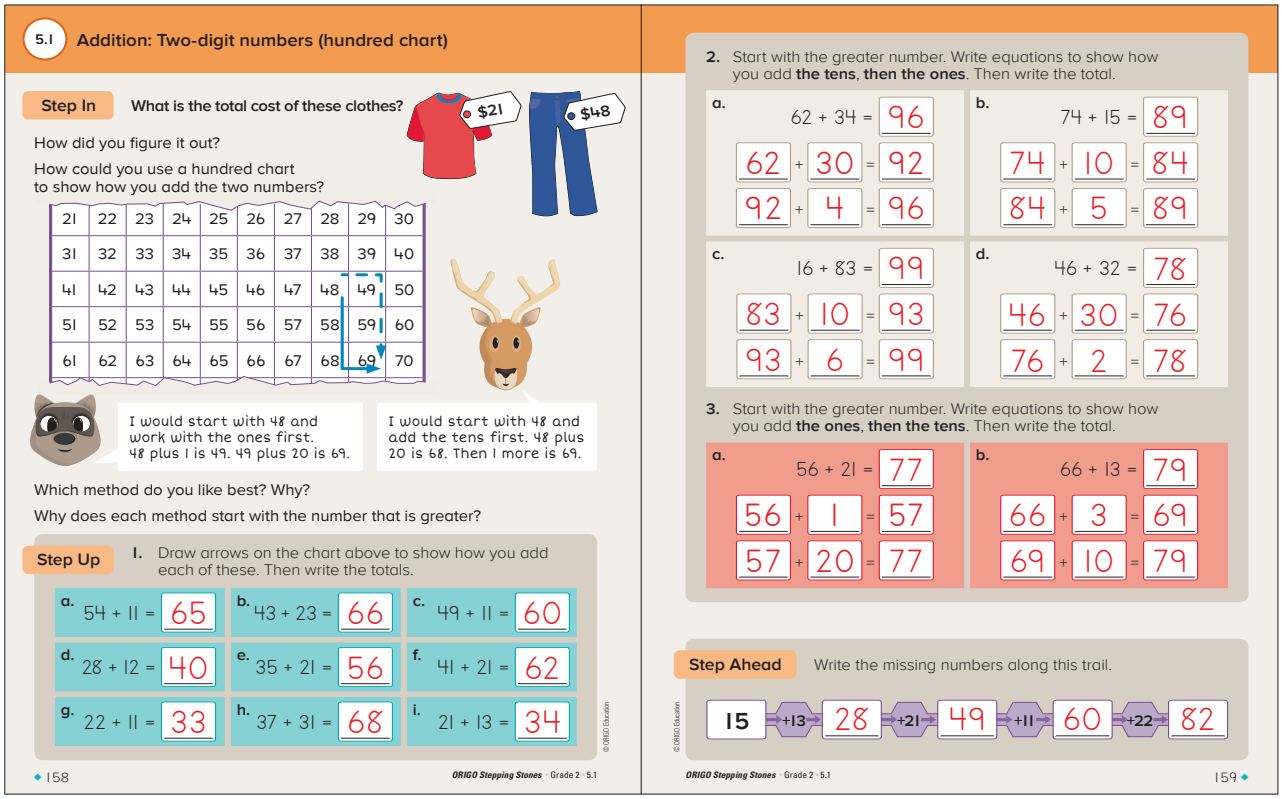
Refer to the prices $56 and $23 on the board to repeat the activity, starting at 56 and adding the ones first, then the tens of 23. For example, 56 + 3 = 59; 59 + 20 = 79. Establish that the total in each method (tens first or ones first) is the same. Repeat the discussion for $43 + $24 and $62 + $37.

Work through the Step In discussion (Student Journal 5.1) with the whole class. Read the Step Up and Step Ahead instructions with the students. Make sure they know what to do, then have them work independently to complete the tasks.

ELL

Have the students discuss the word *total* before moving on with the activity. Provide pairs of students with base-10 blocks to demonstrate their thoughts about hundred charts, if necessary. Allow students to process the questions, formulate an answer, and discuss their thoughts with another student before presenting their ideas to the class.

Student Journal 5.1, pp. 158–159



5.1 Addition: Two-digit numbers (hundred chart)

Step In What is the total cost of these clothes?

$21 $48

How did you figure it out?

How could you use a hundred chart to show how you add the two numbers?

21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70

I would start with 48 and work with the ones first. 48 plus 1 is 49. 49 plus 20 is 69.

I would start with 48 and add the tens first. 48 plus 20 is 68. Then 1 more is 69.

Which method do you like best? Why?

Why does each method start with the number that is greater?

Step Up 1. Draw arrows on the chart above to show how you add each of these. Then write the totals.

a. 54 + 11 = 65 b. 43 + 23 = 66 c. 49 + 11 = 60
d. 28 + 12 = 40 e. 35 + 21 = 56 f. 41 + 21 = 62
g. 22 + 11 = 33 h. 37 + 31 = 68 i. 21 + 13 = 34

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2. Start with the greater number. Write equations to show how you add **the tens, then the ones**. Then write the total.

a. 62 + 34 = 96
62 + 30 = 92
92 + 4 = 96

b. 74 + 15 = 89
74 + 10 = 84
84 + 5 = 89

c. 16 + 83 = 99
83 + 10 = 93
93 + 6 = 99

d. 46 + 32 = 78
46 + 30 = 76
76 + 2 = 78

3. Start with the greater number. Write equations to show how you add **the ones, then the tens**. Then write the total.

a. 56 + 21 = 77
56 + 1 = 57
57 + 20 = 77

b. 66 + 13 = 79
66 + 3 = 69
69 + 10 = 79

Step Ahead Write the missing numbers along this trail.

15 →+13→ 28 →+21→ 49 →+11→ 60 →+22→ 82

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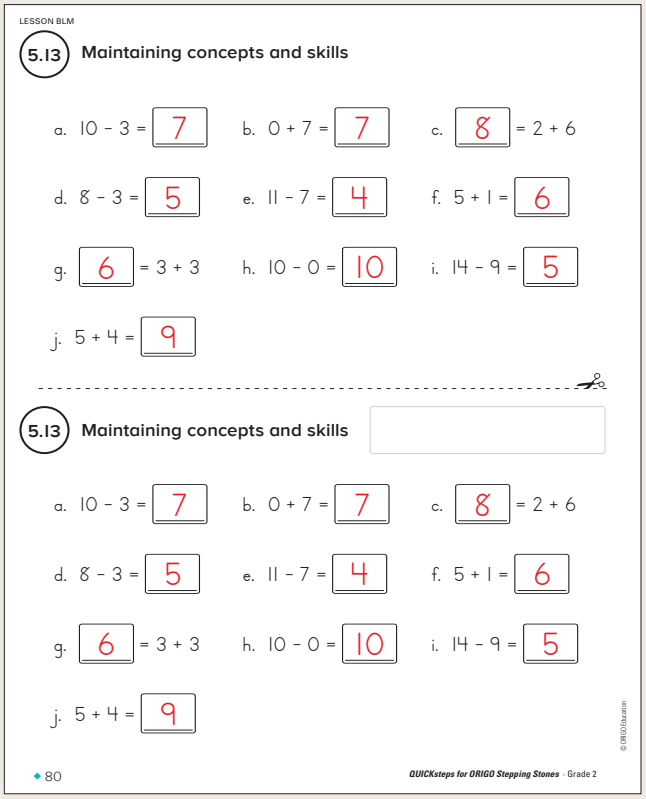
Step 4 Reflecting on the work

Discuss the students' answers to Student Journal 5.1. Ask students to explain how they figured out the answers in Question 1. If they need some guidance, have them look at the example in Question 2a. Ask, *Where did the number 30 come from? What happened to the 4? Where did 92 come from?*

Maintaining concepts and skills

Make copies of Blackline Master 5.13. Cut the page in half and give each student one strip to complete. Alternatively, write the equations on the board and have the students copy and complete them, or just write the answers.



LESSON BLM

5.13 Maintaining concepts and skills

a. 10 − 3 = 7 b. 0 + 7 = 7 c. 8 = 2 + 6

d. 8 − 3 = 5 e. 11 − 7 = 4 f. 5 + 1 = 6

g. 6 = 3 + 3 h. 10 − 0 = 10 i. 14 − 9 = 5

j. 5 + 4 = 9

5.13 Maintaining concepts and skills

a. 10 − 3 = 7 b. 0 + 7 = 7 c. 8 = 2 + 6

d. 8 − 3 = 5 e. 11 − 7 = 4 f. 5 + 1 = 6

g. 6 = 3 + 3 h. 10 − 0 = 10 i. 14 − 9 = 5

j. 5 + 4 = 9

Enrichment

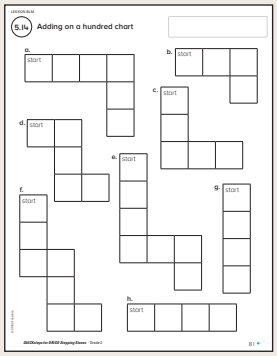
Adding on a hundred chart

Each student will need:

- 1 copy of Blackline Master 5.14

Explain that the blackline master shows parts of a hundred chart and that they can come from any part of the hundred chart. Challenge the students to write a different two-digit starting number for each part. They then write the number that will be at the other end of each part.

Blackline Master 5.14



Small group differentiation

Extra help

Organize students into pairs to play the online *Fundamentals* game, *Back on Board*.

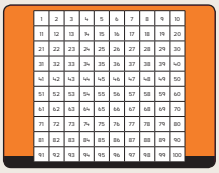
Extra practice

Each pair of students will need:

- hundred chart from *The Number Case*
- transparent counter
- 2 cubes labeled:
  cube A: 12, 14, 21, 23, 31, 34
  cube B: 42, 45, 51, 53, 63, 65

Organize students into pairs and distribute the resources. They take turns to rolls both cubes and move their counter on the hundred chart to demonstrate how they would calculate the total, either by counting on the tens then the ones, or by counting on the ones then the tens. The student who rolls the cubes also completes an equation to match. The activity is repeated until each student records at least 10 different equations.

Hundred chart



5.1 Addition: Two-digit numbers (hundred chart)

Step In

What is the total cost of these clothes?

How did you figure it out?

How could you use a hundred chart to show how you add the two numbers?

21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
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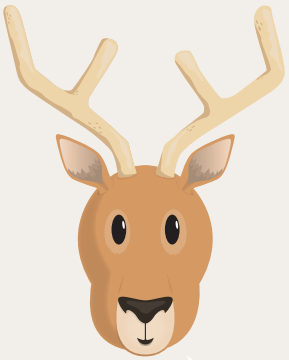

I would start with 48 and work with the ones first. 48 plus 1 is 49. 49 plus 20 is 69.

I would start with 48 and add the tens first. 48 plus 20 is 68. Then 1 more is 69.

Which method do you like best? Why?

Why does each method start with the number that is greater?

Step Up

1. Draw arrows on the chart above to show how you add each of these. Then write the totals.

a. 54 + 11 = ____	**b.** 43 + 23 = ____	**c.** 49 + 11 = ____
d. 28 + 12 = ____	**e.** 35 + 21 = ____	**f.** 41 + 21 = ____
g. 22 + 11 = ____	**h.** 37 + 31 = ____	**i.** 21 + 13 = ____

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Step In

What is the total cost of these clothes?

How did you figure it out?

How could you use a hundred chart to show how you add the two numbers?

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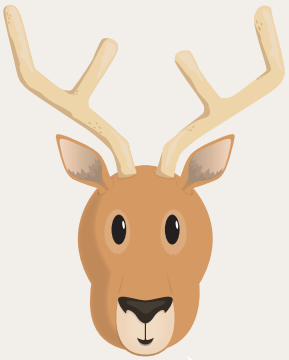

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Which method do you like best? Why?

Why does each method start with the number that is greater?

Step Up

1. Draw arrows on the chart above to show how you add each of these. Then write the totals.

a.	54 + 11 = 65	**b.**	43 + 23 = 66	**c.**	49 + 11 = 60
d.	28 + 12 = 40	**e.**	35 + 21 = 56	**f.**	41 + 21 = 62
g.	22 + 11 = 33	**h.**	37 + 31 = 68	**i.**	21 + 13 = 34

2. Start with the greater number. Write equations to show how you add **the tens**, **then the ones**. Then write the total.

a.

62 + 34 = ____

62 + 30 = 92

92 + 4 = ____

b.

74 + 15 = ____

____ + ____ = ____

____ + ____ = ____

c.

16 + 83 = ____

____ + ____ = ____

____ + ____ = ____

d.

46 + 32 = ____

____ + ____ = ____

____ + ____ = ____

3. Start with the greater number. Write equations to show how you add **the ones**, **then the tens**. Then write the total.

a.

56 + 21 = ____

56 + 1 = 57

57 + 20 = ____

b.

66 + 13 = ____

____ + ____ = ____

____ + ____ = ____

Step Ahead

Write the missing numbers along this trail.

15 → +13 → ____ → +21 → ____ → +11 → ____ → +22 → ____

2. Start with the greater number. Write equations to show how you add **the tens**, **then the ones**. Then write the total.

a. 62 + 34 = 96

62 + 30 = 92

92 + 4 = 96

b. 74 + 15 = 89

74 + 10 = 84

84 + 5 = 89

c. 16 + 83 = 99

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3. Start with the greater number. Write equations to show how you add **the ones**, **then the tens**. Then write the total.

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56 + 1 = 57

57 + 20 = 77

b. 66 + 13 = 79

66 + 3 = 69

69 + 10 = 79

Step Ahead

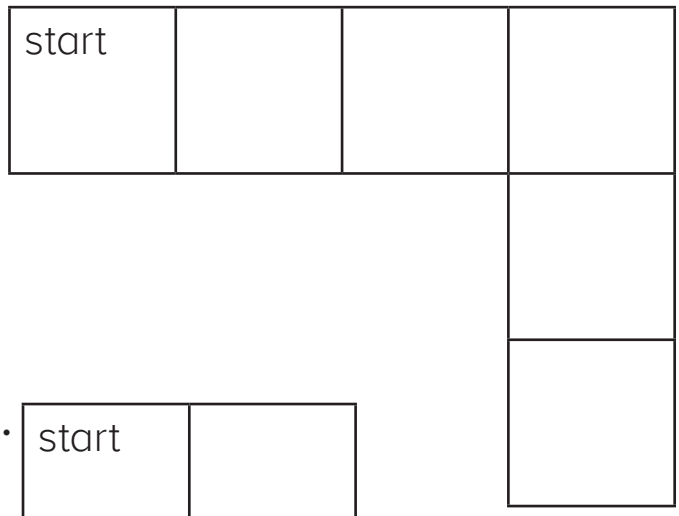
Write the missing numbers along this trail.

15 →+13→ 28 →+21→ 49 →+11→ 60 →+22→ 82

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

5.14 Adding on a hundred chart

a.



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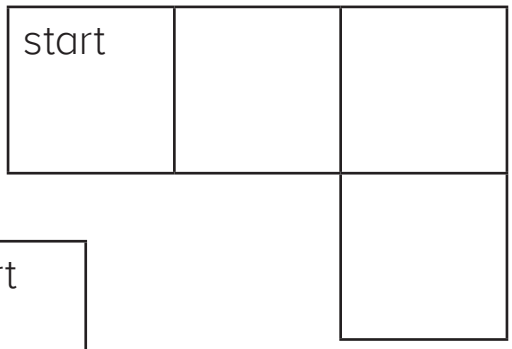
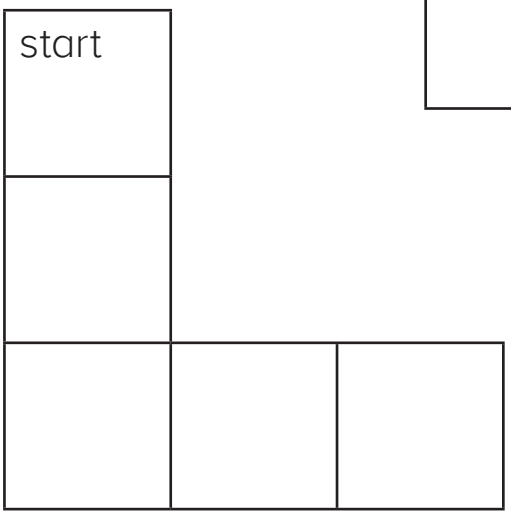
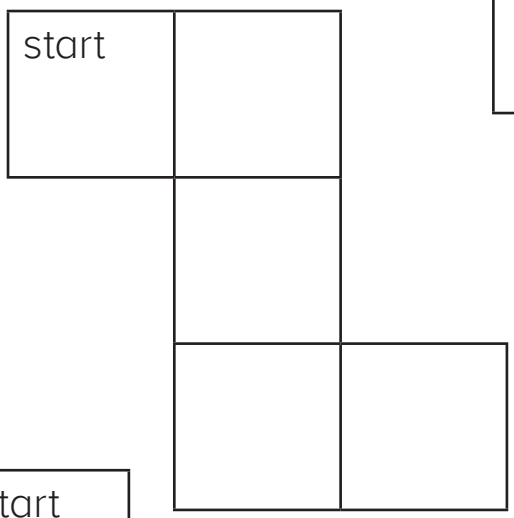


c.



d.



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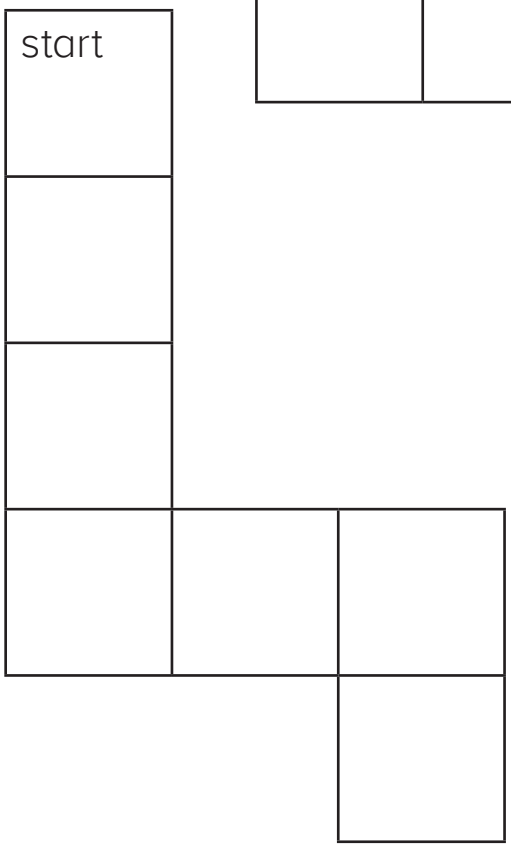

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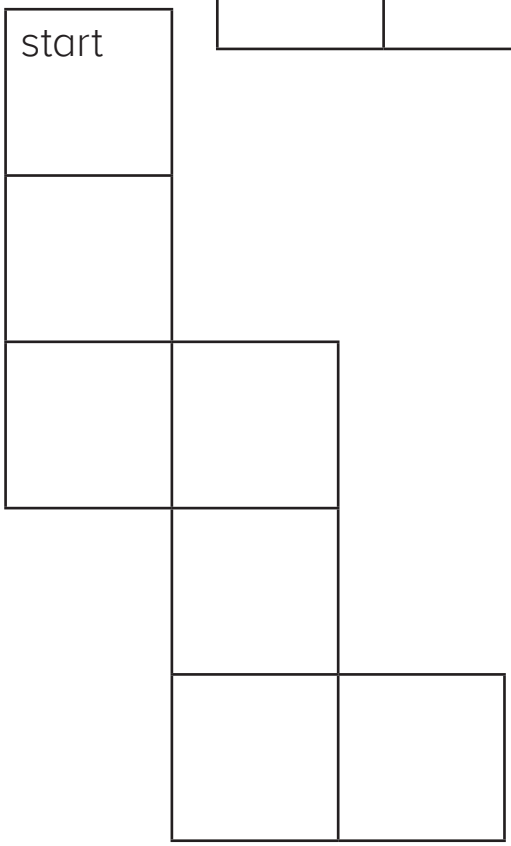
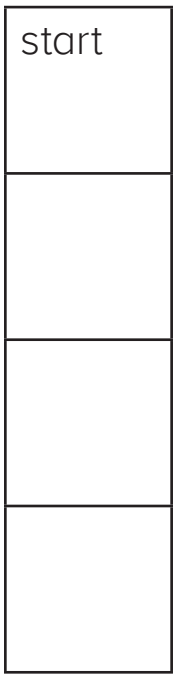
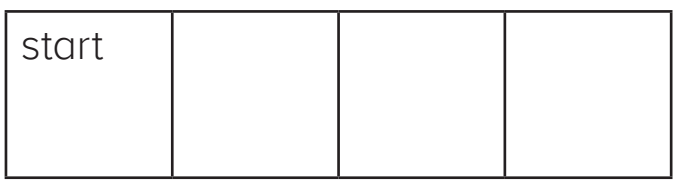


g.



h.



5.13 Maintaining concepts and skills

a. 10 − 3 = ____ b. 0 + 7 = ____ c. ____ = 2 + 6

d. 8 − 3 = ____ e. 11 − 7 = ____ f. 5 + 1 = ____

g. ____ = 3 + 3 h. 10 − 0 = ____ i. 14 − 9 = ____

j. 5 + 4 = ____

5.13 Maintaining concepts and skills

a. 10 − 3 = ____ b. 0 + 7 = ____ c. ____ = 2 + 6

d. 8 − 3 = ____ e. 11 − 7 = ____ f. 5 + 1 = ____

g. ____ = 3 + 3 h. 10 − 0 = ____ i. 14 − 9 = ____

j. 5 + 4 = ____

5.1 Suma: Números de dos dígitos (tabla de cien)

Conoce

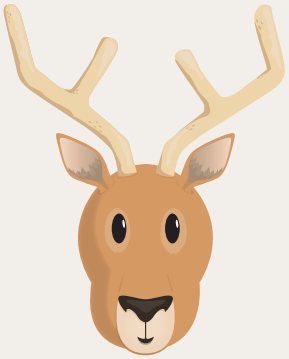
¿Cuál es el costo total de estas prendas?

¿Cómo lo calculaste?

¿Cómo podrías utilizar una tabla de cien para indicar cómo sumaste los dos números?

21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70

Yo iniciaría en 48 y sumaría las unidades primero. 48 más 1 son 49. 49 más 20 son 69.



Yo iniciaría en 48 y sumaría las decenas primero. 48 más 20 son 68. Luego uno más son 69.

¿Cuál método te gusta más? ¿Por qué?

¿Por qué cada método inicia con el número mayor?

Intensifica

1. Dibuja flechas en la tabla de arriba para indicar cómo sumas cada una de estas ecuaciones. Luego escribe los totales.

a.	54 + 11 = ____	**b.**	43 + 23 = ____	**c.**	49 + 11 = ____
d.	28 + 12 = ____	**e.**	35 + 21 = ____	**f.**	41 + 21 = ____
g.	22 + 11 = ____	**h.**	37 + 31 = ____	**i.**	21 + 13 = ____

2. Inicia con el número mayor. Escribe ecuaciones para indicar cómo sumas **las decenas**, **luego las unidades**. Luego escribe el total.

a.

62 + 34 = ____

62 + 30 = 92

92 + 4 = ____

b.

74 + 15 = ____

____ + ____ = ____

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a.

56 + 21 = ____

56 + 1 = 57

57 + 20 = ____

b.

66 + 13 = ____

____ + ____ = ____

____ + ____ = ____

Avanza

Escribe los números que faltan a lo largo de este camino.

2. Inicia con el número mayor. Escribe ecuaciones para indicar cómo sumas **las decenas**, **luego las unidades**. Luego escribe el total.

a.

62 + 34 = 96

62 + 30 = 92

92 + 4 = 96

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51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70

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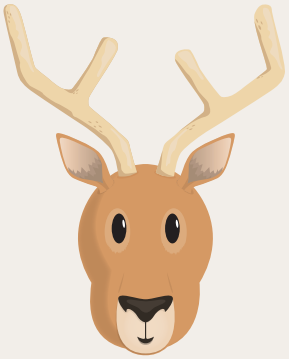

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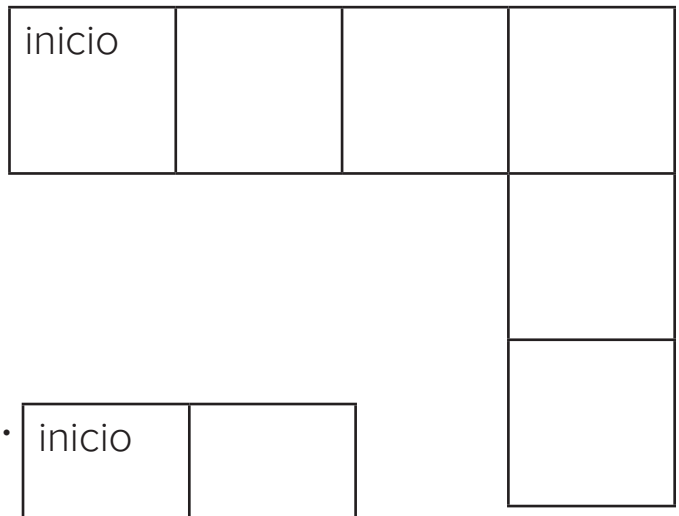
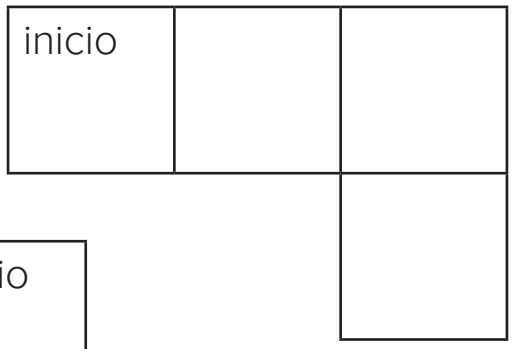
5.14 Sumando en una tabla de cien

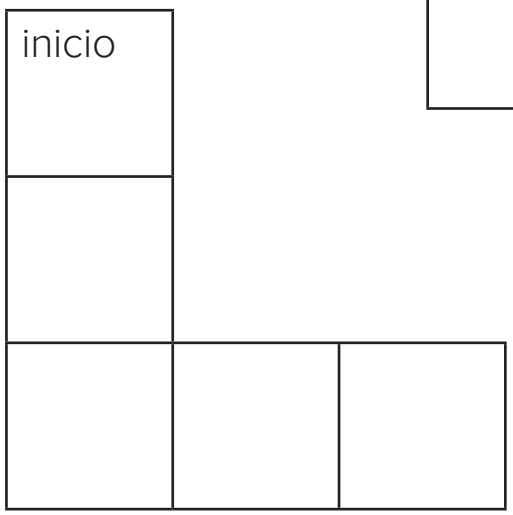
a.



b.



c.



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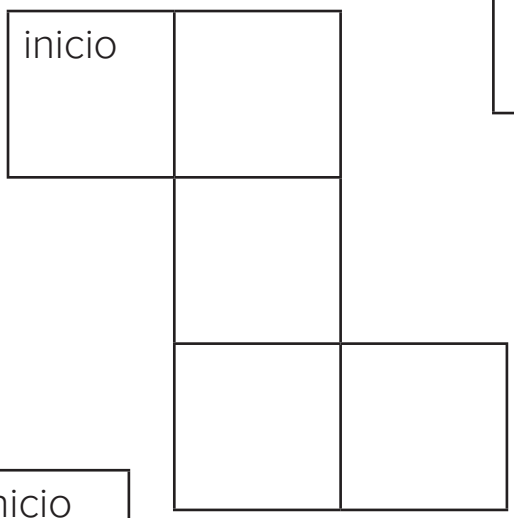
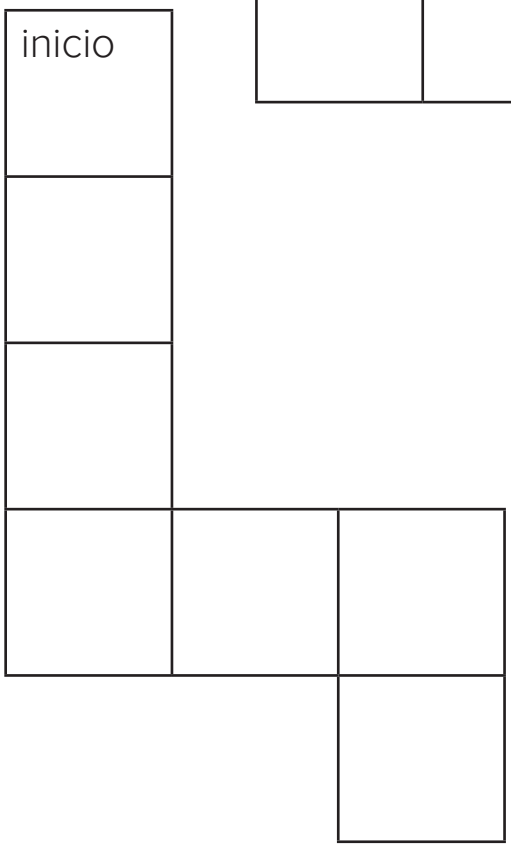
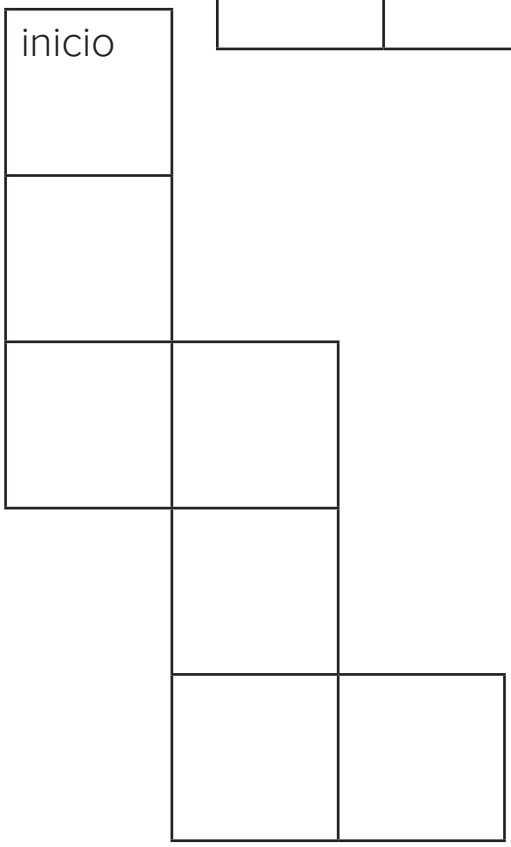


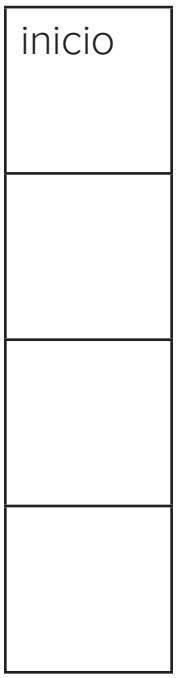
e.



f.



g.



h.