





Student Guide

Paper-and-Pencil Subtraction (SG pp. 161–163)
Questions 1–4

1. **A.** Possible response: She changed 7 skinnies to 6 and 3 bits to 13.
B. Possible response: After trading one of the 7 skinnies for 10 bits, there were 6 skinnies. Then she added 10 skinnies to the 6 to make 16 skinnies so she could subtract 8 skinnies.
2. **A.** Answers will vary. Possible response: Sara had to regroup in order to subtract 7 ones from 6 ones. When she regrouped, the 5 tens, or 50, became 4 tens, or 40. Sara used the ten ones to add to the 6 ones to make 16.
B. Sara cannot subtract 6 tens from 4 tens, so she regrouped 1 hundred to make 10 tens. The 7 hundred in her problem became 6 hundred, and the 4 tens (40) became 14 tens. Now Sara can subtract 6 tens from 14 tens.
3. **A.** 39 **B.** 42 **C.** 233
D. 117 **E.** 219 **F.** 2188

Paper-and-Pencil Subtraction


Kathy decided to record her work on a base-ten recording sheet. Here is her work for the problem $573 - 289$:

			
5 ⁴	7 ¹⁶	3 ¹³	
-	2	8	9
-----	2	8	4

1. Review Kathy's work with base-ten pieces on the first *Subtracting with Base-Ten Pieces* page in Lesson 3. Discuss how Kathy's written work above matches her work with the base-ten pieces.
 - A.** How can you tell that she traded 1 skinny for 10 bits?
 - B.** Why are there two numbers crossed out in the middle column?

Sara looked at Kathy's work.

You do not need a recording sheet to tell the value of each digit in a number. The first place from the right is always the ones column, the second place is always the tens place, and so on.



Sara

Sara solved Kathy's problem like this:

$$\begin{array}{r} ^{\text{100}} ^{\text{10}} ^{\text{1}} \\ 573 \\ -289 \\ \hline 284 \end{array}$$


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Paper-and-Pencil Subtraction SG • Grade 3 • Unit 7 • Lesson 4 161

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Sara solved a new problem, $536 - 218$, like this:

I have to take 8 bits from 6 bits. That is impossible. I have to regroup. I can take a skinny and trade it for 10 bits. Then I have enough bits to subtract.



Sara

$$\begin{array}{r} ^{\text{100}} ^{\text{10}} ^{\text{1}} \\ 536 \\ -218 \\ \hline 318 \end{array}$$

2. **A.** Explain why Sara wrote 4 above the 5 and wrote 16 above the 6 in the problem below.

$$\begin{array}{r} ^{\text{100}} ^{\text{10}} ^{\text{1}} \\ 756 \\ -167 \\ \hline 9 \end{array}$$
- B.** Sara continued the problem. Explain why she wrote 6 above the 7 and wrote 14 above the 4.

$$\begin{array}{r} ^{\text{100}} ^{\text{10}} ^{\text{1}} \\ 6 ^{\text{10}} 756 \\ -167 \\ \hline 589 \end{array}$$

3. Solve the following problems using Sara's method.

A. $\begin{array}{r} 64 \\ -25 \end{array}$	B. $\begin{array}{r} 70 \\ -28 \end{array}$	C. $\begin{array}{r} 441 \\ -208 \end{array}$
D. $\begin{array}{r} 309 \\ -192 \end{array}$	E. $\begin{array}{r} 506 \\ -287 \end{array}$	F. $\begin{array}{r} 6005 \\ -3817 \end{array}$

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Use Johnny's *Paper-and-Pencil Subtraction* in the *Student Activity Book* to practice Sara's method.

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Checking Your Work with Addition

"I know I sometimes make mistakes when I subtract. So I want a good way to check my answers," said Kathy.

"I use addition to check," said Sara. "In a subtraction problem, I start with a number and subtract something. If I add back what I subtracted, I should get the number that I started with. If I do not, I must have made a mistake."

Kathy used Sara's method to do the problem $621 - 293$. Her answer was 332.

$$\begin{array}{r} 621 \\ -293 \\ \hline \text{Answer } 332 \end{array}$$

She used addition to check her answer.



When I add $293 + 332$ to check, I should get the number I started with, 621. But I get 625. Hmm . . .

$$\begin{array}{r} 621 \\ -293 \\ \hline \text{Answer } 332 \\ \text{Check } 625 \end{array}$$

Adding these two numbers should give 621, the number Kathy started with. Instead she got 625 when she added. Kathy must have made a mistake.

4. Kathy used addition to check these answers. Which are correct and which are incorrect? Tell how you know.

- | | | |
|---|--|--|
| A. $\begin{array}{r} 492 \\ -45 \\ \hline \text{Answer } 447 \\ \text{Check } 492 \end{array}$ | B. $\begin{array}{r} 867 \\ -759 \\ \hline \text{Answer } 118 \\ \text{Check } 877 \end{array}$ | C. $\begin{array}{r} 8120 \\ -1156 \\ \hline \text{Answer } 6964 \\ \text{Check } 8120 \end{array}$ |
|---|--|--|

For more practice, use the *Checking with Addition* page in the *Student Activity Book*.

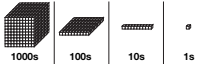
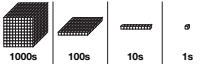
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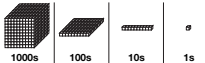
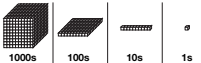
4. A and C are correct. Explanation will vary. Students should recognize the addition check should be the same as the minuend (top number) of their subtraction problem. If the total is not the same, then they subtracted incorrectly.

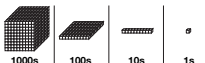
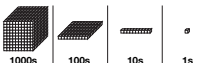
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Name _____ Date _____

Solve the following problems. Think of base-ten pieces as you record your trades.

1. 	2. 
$\begin{array}{r} 1000s \\ 100s \\ 10s \\ 1s \\ \hline \\ 6 \\ -2 \\ \hline 9 \\ 5 \end{array}$	$\begin{array}{r} 1000s \\ 100s \\ 10s \\ 1s \\ \hline \\ 7 \\ -3 \\ \hline 5 \\ 8 \end{array}$

3. 	4. 
$\begin{array}{r} 1000s \\ 100s \\ 10s \\ 1s \\ \hline \\ 3 \\ -2 \\ \hline 4 \\ 2 \\ 8 \end{array}$	$\begin{array}{r} 1000s \\ 100s \\ 10s \\ 1s \\ \hline \\ 3 \\ -1 \\ \hline 8 \\ 9 \\ 1 \end{array}$

5. 	6. 
$\begin{array}{r} 1000s \\ 100s \\ 10s \\ 1s \\ \hline \\ 5 \\ -3 \\ \hline 7 \\ 8 \\ 9 \end{array}$	$\begin{array}{r} 1000s \\ 100s \\ 10s \\ 1s \\ \hline \\ 6 \\ -4 \\ \hline 3 \\ 2 \\ 5 \\ 6 \end{array}$

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Student Activity Book

Subtraction on Recording Sheets (SAB p. 224) Questions 1–6

- | | |
|--------|---------|
| 1. 44 | 2. 37 |
| 3. 118 | 4. 198 |
| 5. 187 | 6. 1509 |

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Student Activity Book

Recording Your Subtraction
(SAB pp. 225–226)

Questions 1–7

1. Nisha took 1 skinny, or ten, away from the 2 tens to make 1 ten and traded it with 10 bits, which added to the 3 ones to make 13 bits.
2. 15
3. 28
4. 223
5. 486
6. 458
7. 1538

Name _____ Date _____

Recording Your Subtraction

Homework

Nisha wanted to solve $423 - 319$. She put out 4 flats, 2 skinnies, and 3 bits.

	<table border="1" style="border-collapse: collapse; width: 100px;"> <tr><th>1000s</th><th>100s</th><th>10s</th><th>1s</th></tr> <tr><td>4</td><td>2</td><td>3</td><td></td></tr> <tr><td>-</td><td>3</td><td>1</td><td>9</td></tr> </table>	1000s	100s	10s	1s	4	2	3		-	3	1	9
1000s	100s	10s	1s										
4	2	3											
-	3	1	9										

She realized she could not take 9 bits from 3 bits. So she traded 1 skinny for 10 bits. Then she had 1 skinny and 13 bits.

	<table border="1" style="border-collapse: collapse; width: 100px;"> <tr><th>1000s</th><th>100s</th><th>10s</th><th>1s</th></tr> <tr><td>4</td><td>1</td><td>13</td><td></td></tr> <tr><td>-</td><td>3</td><td>1</td><td>9</td></tr> </table>	1000s	100s	10s	1s	4	1	13		-	3	1	9
1000s	100s	10s	1s										
4	1	13											
-	3	1	9										

After the trade, she took away 9 bits. She also took away 1 skinny and 3 flats.

	<table border="1" style="border-collapse: collapse; width: 100px;"> <tr><th>1000s</th><th>100s</th><th>10s</th><th>1s</th></tr> <tr><td>4</td><td>1</td><td>13</td><td></td></tr> <tr><td>-</td><td>3</td><td>1</td><td>9</td></tr> <tr><td></td><td>1</td><td>0</td><td>4</td></tr> </table>	1000s	100s	10s	1s	4	1	13		-	3	1	9		1	0	4
1000s	100s	10s	1s														
4	1	13															
-	3	1	9														
	1	0	4														

1. How did Nisha show that she traded one skinny for ten bits?

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Name _____ Date _____

Solve the following problems. Think of base-ten pieces as you record your trades.

2.

1000s	100s	10s	1s
		3	9
		- 2	4

3.

1000s	100s	10s	1s
		7	3
		- 4	5

4.

1000s	100s	10s	1s
	4	5	2
	- 2	2	9

5.

1000s	100s	10s	1s
	6	7	8
	- 1	9	2

✓ Check-In: Questions 6-7

6.

1000s	100s	10s	1s
	8	4	6
	- 3	8	8

7.

1000s	100s	10s	1s	
	3	3	5	4
	- 1	8	1	6

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Student Activity Book

**Johnny's Paper and Pencil Subtraction
(SAB pp. 227–228)
Questions 1–10**

1. Answers will vary. Possible response: The two above the three is 2 tens. Johnny subtracted 1 ten to add to the 5 ones so that he could subtract 8. The 15 above the five shows the ten he added to 5 ones.
2. Answers will vary. Possible response: Johnny could not subtract 70 from the remaining 20, so he traded one hundred from 7 hundreds for tens, which left 6 hundreds.
3. 638 4. 4064
5. 1589 6. 367
7. 4 8. 188
9. Answers will vary. Possible strategy: Count up 4 from 999 to 1003; $1003 - 999 = 4$
10. Answers will vary. Possible strategy: Instead of $489 - 301$, think of $489 - 300 = 189$ and take 1 away, 188.

Name _____ Date _____

Johnny's Paper-and-Pencil Subtraction



1. Johnny solved a problem and recorded his work. Explain why he wrote the 2 above the 3 and the 15 above the 5.

$$\begin{array}{r} ^2 ^{15} \\ 7\cancel{3}^2 \\ - 178 \\ \hline 7 \end{array}$$

2. Johnny continued the problem. Explain why he wrote 6 above the 7 and 12 above the 2.

$$\begin{array}{r} ^6 ^{12} ^{15} \\ \cancel{7}^6 \cancel{3}^1 \cancel{8}^5 \\ - 178 \\ \hline 557 \end{array}$$

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Paper-and-Pencil Subtraction SAB • Grade 3 • Unit 7 • Lesson 4 227

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Name _____ Date _____

Solve the problems.

3.
$$\begin{array}{r} 687 \\ - 49 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 4327 \\ - 263 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 3067 \\ - 1478 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 2056 \\ - 1689 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 1003 \\ - 999 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 489 \\ - 301 \\ \hline \end{array}$$

9. Show a way to solve Question 7 in your head.

10. Show a way to solve Question 8 in your head.

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Student Activity Book

**Checking with Addition (SAB p. 229)
Questions 1–2**

1. **A.** Correct. $205 + 268 = 473$
B. Incorrect. $1489 - 597 = 892$;
 $892 + 597 = 1489$
C. Incorrect. $3232 - 1581 = 1651$;
 $1651 + 1581 = 3232$
D. Correct. $3222 + 2783 = 6005$
2. **A.** 139;
$$\begin{array}{r} 139 \\ + 204 \\ \hline 300 \\ 30 \\ 13 \\ \hline 343 \end{array}$$
 B. 782;
$$\begin{array}{r} 782 \\ + 597 \\ \hline 1200 \\ 170 \\ 9 \\ \hline 1379 \end{array}$$
- C.** 1451;
$$\begin{array}{r} 2690 \\ + 1451 \\ \hline 3000 \\ 1000 \\ 140 \\ \hline 1 \\ \hline 4141 \end{array}$$
 D. 134;
$$\begin{array}{r} 11 \\ 3873 \\ + 134 \\ \hline 4007 \end{array}$$

Name _____ Date _____

Checking with Addition

1. Johnny solved a few subtraction problems but made some mistakes. Use addition to check his answers. If an answer is wrong, rewrite the problem and solve it correctly. Check with addition.

<p>A.</p> $\begin{array}{r} 473 \\ - 205 \\ \hline 268 \end{array}$	<p>B.</p> $\begin{array}{r} 1489 \\ - 597 \\ \hline 1992 \end{array}$
<p>C.</p> $\begin{array}{r} 3232 \\ - 1581 \\ \hline 2751 \end{array}$	<p>D.</p> $\begin{array}{r} 6005 \\ - 2783 \\ \hline 3222 \end{array}$

2. Solve the following problems. Show how to use addition to check your work.

<p>A.</p> $\begin{array}{r} 343 \\ - 204 \\ \hline \end{array}$	<p>B.</p> $\begin{array}{r} 1379 \\ - 597 \\ \hline \end{array}$
<p>C.</p> $\begin{array}{r} 4141 \\ - 2690 \\ \hline \end{array}$	<p>D.</p> $\begin{array}{r} 4007 \\ - 3873 \\ \hline \end{array}$

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Paper-and-Pencil Subtraction
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Name _____ Date _____

Subtraction Checkup

1. Johnny solved a subtraction problem. Then he added his answer and the number he subtracted. He knew he made a mistake.

$$\begin{array}{r} 673 \\ - 482 \\ \hline 211 \text{ Answer} \\ + 482 \text{ Check} \\ \hline 693 \end{array}$$

How did he know that?

2. Yolanda used base-ten pieces to solve this problem.

A. Which base-ten pieces did she trade?

$$\begin{array}{r} 5 \text{ } 13 \\ 625 \\ - 170 \\ \hline 465 \end{array}$$

B. Why did she write a 13 above the 3?

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Assessment Master TG • Grade 3 • Unit 7 • Lesson 4 |

Teacher Guide - Page 1

Name _____ Date _____

3. Johnny solved some more subtraction problems. Check his answers with addition. If an answer is wrong, rewrite the problem and find the correct answer. Check with addition.

A. $\begin{array}{r} 84 \\ - 47 \\ \hline 47 \end{array}$ B. $\begin{array}{r} 302 \\ - 159 \\ \hline 253 \end{array}$ C. $\begin{array}{r} 8204 \\ - 1549 \\ \hline 6655 \end{array}$

4. Solve the following problems. Use addition to check your work.

A. $\begin{array}{r} 857 \\ - 432 \\ \hline \end{array}$ B. $\begin{array}{r} 201 \\ - 148 \\ \hline \end{array}$ C. $\begin{array}{r} 2304 \\ - 1548 \\ \hline \end{array}$

5. Explain a way to solve Question 4B in your head.

Subtraction Checkup Feedback Box	Expect- ation	Check In	Comments
Apply place value concepts to make connections among representations of numbers. [Q# 1-4]	E1		
Subtract multidigit numbers using mental math strategies. [Q# 5]	E3		
Use the compact paper-and-pencil method to subtract. [Q# 3-4]	E4		

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Teacher Guide

**Subtraction Checkup (TG pp. 1–2)
Questions 1–5**

1. Answers will vary. Possible response: Johnny knew he made a mistake because the answer to his addition problem did not match the number he started with.
2. A. Yolanda had to trade 1 flat for 10 skinnies.
B. She wrote a 13 above the 3 to show that after she traded 1 flat for 10 skinnies she had 13 tens in the tens column instead of 3.
3. A. Incorrect. $84 - 47 = 37$
 $47 + 37 = 84$
B. Incorrect. $302 - 159 = 143$
 $143 + 159 = 302$
C. Correct. $6655 + 1549 = 8204$
4. A. $857 - 432 = 425$
 $425 + 432 = 857$
B. $201 - 148 = 53$
 $148 + 53 = 201$
C. $2304 - 1548 = 756$
 $756 + 1548 = 2304$
5. Answers will vary. Possible strategy: Count up 2 from 148 to 150, add 50 to get to 200 and then add 1 more to get to 201.
 $2 + 50 + 1 = 53$, so $201 - 148 = 53$.