



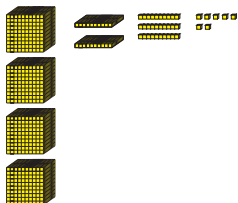
Rhonda and Joe work for the TIMS Candy Company.

1. Rhonda has 3 flats, 1 skinny, and 5 bits. How many pieces of candy is that?



Write a number sentence to match the pieces.

2. Joe has 4 packs, 2 flats, 3 skinnies, and 7 bits. How many pieces of candy is that?



Write a number sentence to match the pieces.

3. Rhonda has 15 bits, 3 flats, and 3 skinnies. She says this is 345 pieces of candy. Is she correct? If not, how many pieces of candy does she really have?



Write a number sentence to match the pieces.

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The TIMS Candy Company

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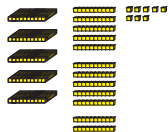
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Questions 1–20 (SG pp. 109–114)

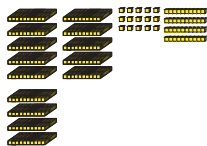
1. 315 pieces;  $300 + 10 + 5 = 315$
2. 4237 pieces;  $4000 + 200 + 30 + 7 = 4237$
3. Rhonda is correct;  $300 + 30 + 15 = 345$
4. Joe is incorrect. He has 628 pieces of candy.  
 $500 + 120 + 8 = 628$
5. Joe is correct.  $1400 + 40 + 15 = 1455$
6. Rhonda is incorrect. She has 2453 pieces of candy.  
 $2000 + 400 + 50 + 3 = 2453$
7. **A.** Both have 355 pieces of candy.  
Joe:  $300 + 30 + 25 = 355$   
Rhonda:  $200 + 140 + 15 = 355$   
**B.** Yes, because both sides of the equal sign add up to 355.
8. **A.** Both have 282 pieces of candy.  
Rhonda:  $100 + 170 + 12 = 282$   
Joe:  $200 + 80 + 2 = 282$   
**B.**  $100 + 170 + 12 = 200 + 80 + 2$   
**C.** Yes, because both sides of the equal sign add up to 282.

4. Joe has 5 flats, 12 skinnies, and 8 bits. He says this is 528 pieces of candy. Is he correct? If not, how many pieces of candy does he really have?



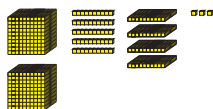
Write a number sentence to match Joe's pieces.

5. Joe has 14 flats, 15 bits, and 4 skinnies. He says this is 1455 pieces of candy. Is he correct? If not, how many pieces of candy does he really have?



Write a number sentence to match Joe's pieces.

6. Rhonda has 2 packs, 5 skinnies, 4 flats, and 3 bits. She says this is 2543 pieces of candy. Is she correct? If not, how many pieces of candy does she really have?



Write a number sentence to match Rhonda's pieces.

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7. **A.** Joe has 3 flats, 3 skinnies, and 25 bits. Rhonda has 2 flats, 14 skinnies, and 15 bits. How much candy does Joe have? How much candy does Rhonda have? Write number sentences to match each set of base-ten pieces.



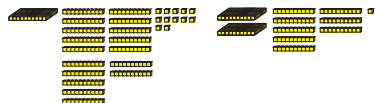
- B.** Joe and Rhonda agree that they both have the same amount, 355 candies. They write a new number sentence that combines the two number sentences into one.

$$\text{Joe} \quad \text{Rhonda}$$

$$300 + 30 + 25 = 200 + 140 + 15$$

Is this a true number sentence? Why or why not?

8. **A.** Rhonda has 1 flat, 17 skinnies, and 12 bits. Joe has 2 flats, 8 skinnies, and 2 bits. How much candy does Rhonda have? How much candy does Joe have? Write number sentences to match each set of base-ten pieces.



- B.** If Rhonda and Joe have the same amount, write a new number sentence that combines their two number sentences into one.

- C.** Is the number sentence you wrote in Question 8B a true sentence? Why or why not?

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9. A. 2 tens  
 0 tens  
 6 ones 26 ones

B.  $10 + 16 = 26$

10. Answers may vary. Some possible solutions follow.

1. 315;

2. 4237;

3. 345;

4. 628;

5. 1455;

6. 2453;

11. A.  $300 + 50 + 6 = 356$

B.  $4000 + 200 + 6 = 4206$

C.  $200 + 40 = 240$

D.  $3000 + 5 = 3005$

**Base-Ten Shorthand**

Sometimes it is useful to solve problems using base-ten pieces. Other times, drawing a picture of base-ten pieces is helpful. Mr. Haddad decided to use a shorthand for the base-ten pieces.

• = Bit / = Skinny = Flat = Pack  
 one ten hundred thousand

9. A. Joe says there are often several ways to show an amount of candy using base-ten pieces. For example, 26 can be shown as:

How many tens? or   
 How many ones? How many ones?

B. There is one more way 26 can be shown using base-ten pieces. What is this third way? Use base-ten shorthand to sketch your answer. Write a number sentence.

10. Use base-ten shorthand to show the number of candies Rhonda and Joe had in Questions 1–6.

11. The workers at the TIMS Candy Company recorded the amount of candy they made. Sketch each amount, using base-ten shorthand. Write a number sentence to match your shorthand.

- A. 356 B. 4206 C. 240 D. 3005

12. One way to show 352, using base-ten shorthand and a number sentence is:

$300 + 40 + 12 = 352$

Sketch 352 in two other ways using base-ten shorthand.

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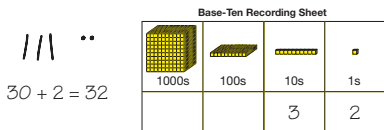
12. Two possible responses:

or

# Answer Key • Lesson 1: The TIMS Candy Company

## The Fewest Pieces Rule

The TIMS Candy Company decided that the best way to record the amount of candy it makes is to use the smallest possible number of base-ten pieces. The company calls this the **Fewest Pieces Rule**. For example, the best way to record 32 candies is to use 3 skinnies and 2 bits.



The best way to record 457 candies is to use 4 flats, 5 skinnies, and 7 bits.

Writing a number showing partitions using the Fewest Pieces Rule is using **expanded form**. Expanded form for 457 is  $400 + 50 + 7$ . **Standard form** is 457. So we write  $457 = 400 + 50 + 7$ .

13. Show each number using base-ten shorthand. Make sure your answer uses the Fewest Pieces Rule. Write a number sentence with expanded form on one side of the equal sign and standard form on the other like the example above.

- A. 236      B. 507      C. 5235      D. 6048

### In Questions 14–20:

- A. Write a number sentence and tell how many Chocos were made.  
 B. Then, check if the Fewest Pieces Rule is followed. If it is not, use base-ten shorthand to show the candy using the fewest pieces possible. Write a new number sentence to match.

Ex.  $400 + 60 + 12 = 472$

- A.  $400 + 60 + 12 = 472$   
 B. No, the Fewest Pieces Rule is not being used.

$400 + 70 + 2 = 472$

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14.

15.

16.

17.

18.

19.

20.

Practice representing numbers using base-ten shorthand with the *More Base-Ten Shorthand* pages in your *Student Activity Book*.

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13. A.

$200 + 30 + 6 = 236$

B.

$500 + 7 = 507$

C.

$5000 + 200 + 30 + 5 = 5235$

D.

$6000 + 40 + 8 = 6048$

14. A. 240;  $200 + 30 + 10 = 240$

B. No

$200 + 40 = 240$

15. A. 1050;  $1000 + 50 = 1050$

B. Yes

16. A. 4220;  $4000 + 100 + 120 = 4220$

B. No

$4000 + 200 + 20 = 4220$

17. A. 4240;  $3000 + 1200 + 30 + 10 = 4240$

B. No

$4000 + 200 + 40 = 4240$

18. A. 1133;  $13 + 120 + 1000 = 1133$

B. No

19. A. 1268;  $1100 + 18 + 150 = 1268$

B. No

20. A. 2039;  $2000 + 30 + 9 = 2039$

B. Yes

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Homework (SG p. 115)

Questions 1–6

1. 37;  $30 + 7 = 37$
2. 114;  $100 + 10 + 4 = 114$
3. 2022;  $2000 + 20 + 2 = 2022$
4. 1100;  $1000 + 100 = 1100$
5. 1090;  $1000 + 90 = 1090$
6. 2001;  $2000 + 1 = 2001$

Dear Family Member:

Your child is reviewing place value—the idea that the value of a digit in a number depends upon where it is placed. For example, the 2 in 329 stands for 2 tens but the 2 in 7293 is 2 hundreds. In class your child uses base-ten pieces to represent numbers. When the pieces are not available, students are encouraged to draw pictures of the base-ten pieces. We call these drawings of the base-ten pieces **base-ten shorthand**.

• = Bit	= Skinny	= Flat	= Pack
one	ten	hundred	thousand

The sketches below show the number of Chocos made by workers at the TIMS Candy Company. Write the amount of candy using numbers. Write a number sentence to match the base-ten shorthand.

1. .....
2. | ....
3. // ..
- 4.
5. // // // // //
6. •

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Name \_\_\_\_\_ Date \_\_\_\_\_

### More Base-Ten Shorthand

✓ **Check-In: Questions 1-2**

1. Joe showed several ways of writing 32 Chocos by using base-ten shorthand. Some of Joe's work was smudged. Write what is missing in the smudged gray area. You may use base-ten pieces to help find the answers. Use base-ten shorthand to sketch your answer. The first one is an example.

**Ex.** Write what is missing in the gray area to show 32 with base-ten shorthand. Write a number sentence to match the pieces.

Here is what Joe thinks. "There are 12 bits showing. That means 20 is missing, because  $32 - 12 = 20$ . I write 20 using base-ten shorthand in the gray area. Now it shows 32." Here is what Joe writes.

$20 + 12 = 32$

**A.** Here is another way to show 32. Fill in the gray area and write a number sentence to match the pieces.

**B.** Here is a third way to show 32. Fill in the gray area and write a number sentence to match the pieces.

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Name \_\_\_\_\_ Date \_\_\_\_\_

2. Rhonda made 267 pieces of candy. Her work got smudged also. For each problem:

- Write the missing information in the gray areas using base-ten shorthand and the Base-Ten Recording Sheet.
- Write a number sentence to match the pieces.

**A.** Here is one way to make 267.

1000s	100s	10s	1s
	2		17

**B.** Here is another way to show 267.

1000s	100s	10s	1s
		16	7

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**More Base-Ten Shorthand**

**Check-In: Questions 1–2 (SAB pp. 91–93)**

1. A.  $30 + 2 = 32$

B.  $10 + 22 = 32$

2. A.  $20 + 6 + 7 = 32$

**Base-Ten Recording Sheet**

1000s	100s	10s	1s
	2		17

$200 + 50 + 17 = 267$

B.  $100 + 60 + 7 = 267$

**Base-Ten Recording Sheet**





1000s	100s	10s	1s
		16	7

$100 + 160 + 7 = 267$

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



Recording Sheet

 1000s	 100s	 10s	 1s
	2	6	7

$$200 + 60 + 7 = 267$$







Recording Sheet

 1000s	 100s	 10s	 1s
	2	4	27

$$200 + 40 + 27 = 267$$



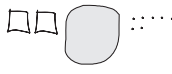
Recording Sheet





 1000s	 100s	 10s	 1s
3	2	10	3

$$3000 + 200 + 100 + 3 = 3303$$


Name \_\_\_\_\_ Date \_\_\_\_\_





C. Here is a third way to show 267.




Base-Ten Recording Sheet			
 1000s	 100s	 10s	 1s
	2	6	7





D. Here is yet another way to show 267.



Base-Ten Recording Sheet			
 1000s	 100s	 10s	 1s
	2	4	27

E. Here is a way to show 3303.



Base-Ten Recording Sheet			
 1000s	 100s	 10s	 1s
3	2	10	3

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