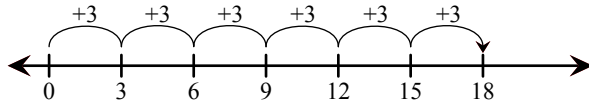


Student Guide

Handy Facts (SG pp. 199–200)

Questions 1–6

1. I do not agree. $3 \times 6 = 18$



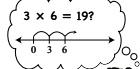
- 2. A. $2 \times 5 = 5 + 5 = 10$
 - B. $3 \times 2 = 3 + 3 = 6$
 - C. $2 \times 9 = 9 + 9 = 18$
 - D. $2 \times 2 = 2 + 2 = 4$
 - E. $2 \times 8 = 8 + 8 = 16$
 - F. $6 \times 2 = 6 + 6 = 12$
3. A number times 10 ends in zero.
4. A. 40; $8 \times 10 = 80$ and half of 80 is 40.
 $8 \times 5 = 40$.
- B. 45; $9 \times 10 = 90$ and half of 90 is 45.
5. A. 30; 5 nickels is 25¢, so 6 nickels is 30¢.
- B. 0; 0 at 5¢ each is 0¢.
- C. 35; 5, 10, 10 15, 20, 25, 30, 35
- D. 20; 2 nickels are 10¢ and 4 nickels are 20¢
- E. 5; 1 nickel is 5¢
- F. 50; 10 nickels are 50¢
6. I do not agree with Chris. 2×9 does not equal 17. $2 \times 9 = 18$ because $2 \times 10 = 20$, $20 - 2 = 18$.

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Handy Facts

Explore Multiplication Strategies

1. Mara says, " $3 \times 6 = 19$." Do you agree? Show Mara how to use a number line to check her answer.



2. Richard uses addition doubles to multiply by 2.



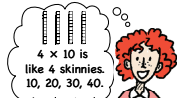
I use addition doubles when I multiply by 2s. 2×4 is the same as $4 + 4 = 8$. 7×2 is the same as $7 + 7 = 14$.

Richard

Use Richard's strategy and write the doubles addition fact he could use to solve each multiplication problem.

- A. $2 \times 5 =$
- B. $3 \times 2 =$
- C. $2 \times 9 =$
- D. $2 \times 2 =$
- E. $2 \times 8 =$
- F. $6 \times 2 =$

3. Emily thinks about base-ten pieces when she multiplies by 10s. What pattern helps you remember the facts for 10?



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Handy Facts

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I know my 10s, but multiplying by 5s is harder for me.

I use the 10s to help me with the facts for the 5s. I know 5 is half of 10. Since $2 \times 10 = 20$, 2×5 would be half of that, 10! $6 \times 10 = 60$, so for 6×5 , I split 60 in half and get 30. $6 \times 5 = 30$.



4. Show how to use Rosa's strategy to solve each problem.
- A. 8×5
 - B. 5×9



$2 \times 5 = 10$ $3 \times 5 = 15$
 $2 \times 5 = 10$ $3 \times 5 = 15$
 $5 \times 5 = 25$

5. Mark thinks about nickels when he multiplies by 5s. Use Mark's strategy to solve each problems.
- A. $5 \times 6 =$
 - B. $5 \times 0 =$
 - C. $5 \times 7 =$
 - D. $4 \times 5 =$
 - E. $5 \times 1 =$
 - F. $10 \times 5 =$
6. Chris skip-counted by 2s in his head. " $2 \times 9 = 17$," he said. Do you agree? Why or why not?

Use strategies to solve multiplication problems on the *Practicing Handy Facts* pages in the *Student Activity Book*.

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Handy Constant Hoppers

Show how each constant hopper hops 10 times. Write the numbers under the number line only where the hoppers land. The first one has been started for you.

A.  Write a multiplication number sentence that matches the +3 hopper's moves. _____

B.  Write a multiplication number sentence that matches the +2 hopper's moves. _____

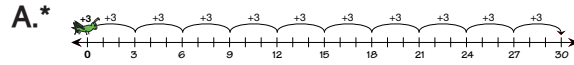
C.  Write a multiplication number sentence that matches the +1 hopper's moves. _____

D.  Write a multiplication number sentence that matches the +1 hopper's moves. _____

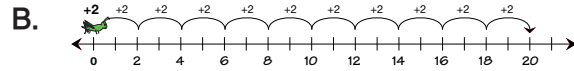
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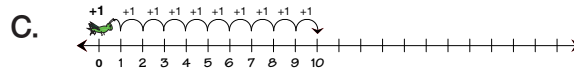
**Handy Constant Hoppers (SAB pp. 259–260)
Questions A–D**



$10 \times 3 = 30$



$10 \times 2 = 20$



$10 \times 1 = 10$

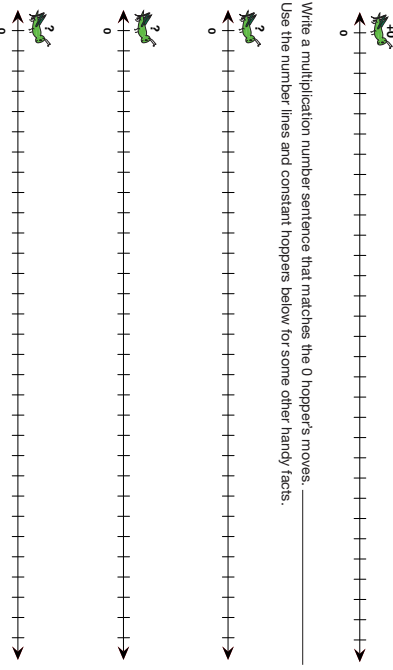
D.* See Figure 2.

$10 \times 0 = 0$

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Name _____ Date _____

D.  Write a multiplication number sentence that matches the 0 hoppers' moves. _____
Use the number lines and constant hoppers below for some other handy facts.

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*Answers and/or discussion are included in the lesson.

My Multiplication Table (SAB p. 261)

×	0	1	2	3		5					10
0	0	0	0	0		0					0
1	0	1	2	3		5					10
2	0	2	4	6		10					20
3	0	3	6	9		15					30
4	0	4	8	12		20					40
5	0	5	10	15		25					50
6	0	6	12	18		30					60
7	0	7	14	21		35					70
8	0	8	16	24		40					80
9	0	9	18	27		45					90
10	0	10	20	30		50					100

Name _____ Date _____

My Multiplication Table

Fill in the columns that are starred. Save this table. You will fill in more facts later.

☆ ☆ ☆ ☆ ☆ ☆ ☆

×	0	1	2	3	4	5	6	7	8	9	10
0	0										
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											

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Discuss the patterns you see in the table with a partner. Try to find a pattern for each starred column. Write about the table's patterns on the back of this page.

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Name _____ Date _____

Practicing Handy Facts

Solve the following problems. Use your *My Multiplication Table* when you need help.

1. $3 \times 2 = \underline{\quad}$ 2. $6 \times 10 = \underline{\quad}$ 3. $0 \times 10 = \underline{\quad}$
 4. $6 \times 5 = \underline{\quad}$ 5. $8 \times 10 = \underline{\quad}$ 6. $1 \times 7 = \underline{\quad}$
 7. $4 \times 1 = \underline{\quad}$ 8. $9 \times 3 = \underline{\quad}$ 9. $6 \times 2 = \underline{\quad}$

10. $\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	11. $\begin{array}{r} 7 \\ \times 2 \\ \hline \end{array}$	12. $\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$	13. $\begin{array}{r} 3 \\ \times 3 \\ \hline \end{array}$
14. $\begin{array}{r} 3 \\ \times 5 \\ \hline \end{array}$	15. $\begin{array}{r} 6 \\ \times 0 \\ \hline \end{array}$	16. $\begin{array}{r} 5 \\ \times 2 \\ \hline \end{array}$	17. $\begin{array}{r} 1 \\ \times 3 \\ \hline \end{array}$

✓ Check-In: Questions 18-22

18. Write and solve a multiplication story about zero. Write a number sentence to go with it.

19. Joe Smart said, " $5 \times 9 = 48$." Moe Smart said, "I know that is wrong because..."

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Name _____ Date _____

20. Write and solve a multiplication story about 5×7 . Draw a picture for your story. Write a number sentence for your story.

Use any strategy to solve the problems. Show or tell in the bubble how you solved the problem.

21. $4 \times 5 =$

22. $3 \times 4 =$

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Practicing Handy Facts (SAB pp. 263–264) Questions 1–22

- | | | | |
|--------|--------|--------|-------|
| 1. 6 | 2. 60 | 3. 0 | |
| 4. 30 | 5. 80 | 6. 7 | |
| 7. 4 | 8. 27 | 9. 12 | |
| 10. 25 | 11. 14 | 12. 40 | 13. 9 |
| 14. 15 | 15. 0 | 16. 10 | 17. 3 |
18. Stories will vary. Possible response: My mom gave 0 cookies to 6 children. Each child got 0×6 cookies or 0 cookies.
19. Answers will vary. Possible response: 5 times a number always ends in 0 or 5.
20. $5 \times 7 = 35$. Stories will vary. Possible response: There are 5 boxes. Each box 7 has trucks inside. How many trucks are there? $5 \times 7 = 35$ trucks.
21. Strategies will vary. Possible response: I skip counted by 5s four times: 5, 10, 15, 20, $4 \times 5 = 20$.
22. Strategies will vary. Possible response: I used counters. 3 groups of 4 counters is 12 counters $3 \times 4 = 12$.

Nickels and Dimes (SAB pp. 265–266)

Questions 1–4

1.

Number of Nickels	Number of Dimes	Value of Nickels	Value of Dimes	Total Value
5	3	\$.25	\$.30	\$.55
7	2	\$.35	\$.20	\$.55
8	4	\$.40	\$.40	\$.80
6	8	\$.30	\$.80	\$1.10
2	9	\$.10	\$.90	\$1.00
4	10	\$.20	\$1.00	\$1.20
3	3	\$.15	\$.30	\$.45
1	5	\$.05	\$.50	\$.55
0	7	0	\$.70	\$.70
9	1	\$.45	\$.10	\$.55

2.


Number of Nickels	Number of Dimes	Value of Nickels	Value of Dimes	Total Value
1	4	\$.05	\$.40	\$.45
3	3	\$.15	\$.30	\$.45
5	2	\$.25	\$.20	\$.45
7	1	\$.35	\$.10	\$.45
9	0	\$.45	0	\$.45

- Joe is wrong. Possible response: I know that with dimes the cents will always end in 0 because it is 10 times something. But 75¢ ends in 5 so you could never get 75¢ with dimes.
- Moe is correct. $3 \times 10¢ = 30¢$ and $9 \times 5¢ = 45¢$
 $30¢ + 45¢ = 75¢$.


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Name _____ Date _____

Nickels and Dimes



1. Complete the following table by counting money or by using multiplication strategies.



Number of Nickels	Number of Dimes	Value of Nickels	Value of Dimes	Total Value
5	3	\$.25	\$.30	\$.55
7	2			
	4	\$.40		
	8	\$.30		
2			\$.90	
4			\$1.00	
3			\$.30	\$.45
		\$.05	\$.50	
0	7			
9			\$.10	\$.55

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Name _____ Date _____

2. How many ways can you make \$.45 using only nickels and dimes? List them in the table below.

Number of Nickels	Number of Dimes	Value of Nickels	Value of Dimes	Total Value

3. Joe Smart said, "I have a pocket full of dimes. I have 75¢." Do you agree with Joe? Why or why not?

4. Moe Smart said, "I have 3 dimes and 9 nickels. I have 75¢." Do you agree with Moe? Why or why not?

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