

Student Activity Book

**Multiplication Facts Strategies
(SAB pp. 315–328)**

Questions 1–22

1. 16; use doubles: $2 \times 4 = 8$ and $8 + 8 = 16$.
2. 12; skip count by three: 3, 6, 9, 12.
3. 20; skip count by 5s: 5, 10, 15, 20.
4. 70; think $7 \times 1 = 7$, but it is 7 tens or 70.
5. 27; think $10 \times 3 = 30$ but that is one extra 3, so subtract $30 - 3 = 27$.
6. 36; I know $5 \times 6 = 30$ then add one more 6.
7. If something comes in a group of 5 things but I have 0 groups, I have zero in all.
8. If I have one pack of gum with eight pieces in the pack, I have 8 pieces of gum; 1×8 means 1 group with 8 things in it.

Name _____ Date _____

Multiplication Facts Strategies

✓ **Self-Check: Questions 1-8**

Show at least one way to solve each multiplication fact. Use drawings, number lines, and rectangles to show your strategy. Decide if you have a strategy or need a strategy and put an "X" in the appropriate box in each table.

1. 2×8

Twos

I need a strategy.	I have a strategy.

2. 3×4

Threes

I need a strategy.	I have a strategy.

3. 5×4

Fives

I need a strategy.	I have a strategy.

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4. 7×10

Tens

I need a strategy.	I have a strategy.

5. 9×3

Nine

I need a strategy.	I have a strategy.

6. 6×6

Square Numbers

I need a strategy.	I have a strategy.

7. Show or tell your partner why $0 \times 5 = 0$.

8. Show or tell your partner why $1 \times 8 = 8$.

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Answer Key • Lesson 10: Workshop: Strategies for Multiplication Facts

9. **A.** Agree. $4 \times 1 = 4$; 4 hops of 1 stops on 4.
B. Agree; $4 \times 0 = 0$; 4 hops of 0 stops on 0.
C. Disagree; $0 \times 5 = 5$; no groups of 5 is 0.
D. Agree. $1 \times 9 = 9$; 1 group of 9 is 9.
E. Agree. $9 \times 1 = 9$; 9 groups with one cube in each is 9 cubes.
F. Agree. $3 \text{ groups} \times 1 \text{ dime} = 3 \text{ dimes}$
 $3 \text{ groups} \times 0 \text{ nickel} = 0 \text{ nickels}$
 $6 \text{ groups} \times 1 \text{ penny} = 6 \text{ pennies}$
- G.** Answers will vary. There are 0 black jelly beans in each of the jars. $0 \times 4 = 0$. There are 0 black jelly beans.
10. 30 minutes. 15 minutes.
 45 minutes. 25 minutes.
 20 minutes. 40 minutes.
 35 minutes. 50 minutes.

Name _____ Date _____

Multiply By 0 and 1

*9. Students wrote the following stories to explain how to multiply by 0 and 1. Decide if you agree or disagree with each explanation.

- If you agree, tell your partner a similar story for a different multiplication fact.
- If you disagree, correct the story.

A. $4 \times 1 = 4$

4 hops of 1 stop on 4

B. 0×4 or 4×0

4 hops of 0 stop on 0

C. $0 \times 5 = 5$

no group of 5 is 5.

D. $1 \times 9 = 9$

1 row of 9 cubes is 9.

E. $9 \times 1 = 9$

9 groups of 1 is 9

F.

How many dimes? $3 \text{ groups} \times 1 \text{ dime} = 3 \text{ dimes}$

How many nickles? $3 \text{ groups} \times 0 \text{ nickles} = 0 \text{ nickles}$

How many pennies? $6 \text{ groups} \times 1 \text{ penny} = 6 \text{ pennies}$

G. Write a story similar to one of the stories in Questions A-F.

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Skip Counting and Repeated Addition

*10. Each one-handed clock shows the minute hand. How many minutes after the hour is showing on each clock?

6
 $\times 5$

3
 $\times 5$

9
 $\times 5$

5
 $\times 5$

4
 $\times 5$

8
 $\times 5$

7
 $\times 5$

10
 $\times 5$

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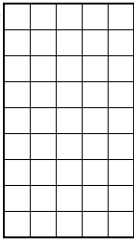
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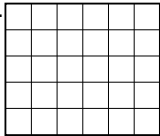
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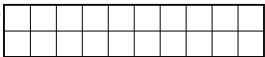
Answer Key • Lesson 10: Workshop: Strategies for Multiplication Facts

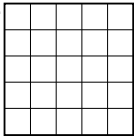
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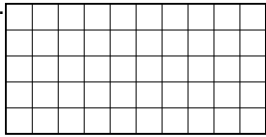
★11. Each rectangle represents a multiplication fact. Write a number sentence for each rectangle. Show how to solve each problem.

A.  _____

B.  _____

C.  _____

D.  _____

E.  _____

F. Show or tell how to solve Question E another way. _____

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
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11. **A.** $9 \times 5 = 45$; Possible response: I broke the rectangle into two parts: $5 \times 5 = 25$, $4 \times 5 = 20$ and $25 + 20 = 45$.
- B.** $5 \times 6 = 30$; Possible response: I used doubles. I broke 6 into $3 + 3$, $5 \times 3 = 15$, so $15 + 15 = 30$.
- C.** $2 \times 10 = 20$; I used doubles $10 + 10 = 20$.
- D.** $5 \times 5 = 25$; I know the square facts.
- E.** $5 \times 10 = 50$; ten is twice five, $5 \times 5 = 25$ so 5 tens is 50.
- F.** Break 5 into $3 + 2$; $3 \times 10 = 30$, $2 \times 10 = 20$ and $30 + 20 = 50$.

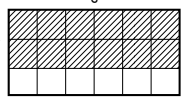
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■12. Irma used the double and then added one more to solve 6×3 . Use her strategy to solve 5×3 and 8×3 .

 **Irma**

6×3




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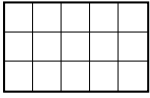
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1

$6 + 6 = 12$ and one 6 is 18.

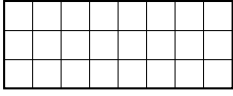


5×3





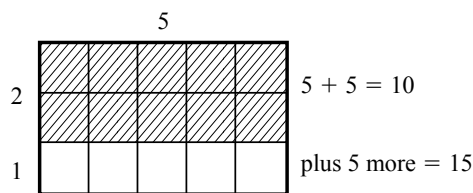
8×3



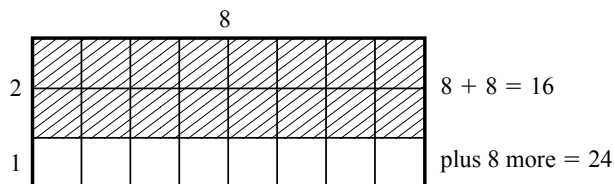
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12. $5 + 5 = 10$ and one 5 is 15



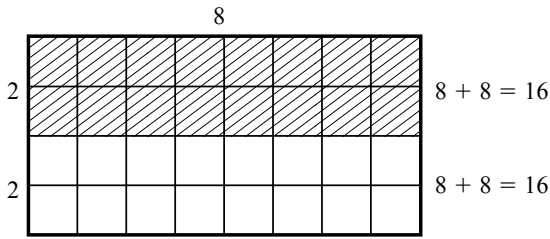
- $8 + 8 = 16$ and one 8 is 24



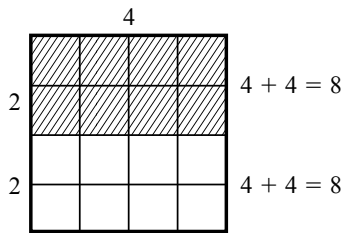
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13. $8 + 8 = 16$ and $16 + 16 = 32$



$4 + 4 = 8$ and $8 + 8 = 16$



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■ 13. Peter used doubles and then added the doubles to solve 4×6 . Use his strategy to solve 4×8 and 4×4 .

4 × 6

4 × 8

4 × 4

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14. Possible response: $5 \times 3 = 15$; Five friends in my class each had three pencils. There were fifteen pencils in all. $3 \times 5 = 15$; Three hens each laid five eggs. The farmer collected fifteen eggs.
15. Yes because each side of the equal sign equals fifteen; they are turn-around facts.
16. Possible response: I agree because each number sentence equals fifteen; they are turn-around facts.

Name _____ Date _____

Turn-around Facts

★ 14. Write a story for each multiplication fact.

5×3

3×5

★ 15. Is this number sentence true? Why or why not?

$3 \times 5 = 5 \times 3$

★ 16. Look at John's explanation.

John

No matter how I think about the problem I land on 15. 3×5 is equal to 5×3 .

3×5

5×3

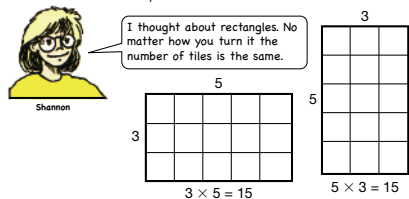
Do you agree with John? Why or why not?

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★17. Look at Shannon's explanation.



Do you agree with Shannon? Why or why not?

■ ★18. Which number sentences are true?

	True	False
A. $10 \times 5 = 5 \times 10$		
B. $4 \times 3 = 3 \times 4$		
C. $9 \times 2 = 2 \times 9$		
D. $3 + 5 = 5 + 3$		
E. $8 - 2 = 2 - 8$		
F. $25 \times 4 = 4 \times 25$		
G. $82 \times 8 = 8 \times 82$		
H. $35 \times 10 = 10 \times 35$		

I. Show or tell how you decided if Question B is true.

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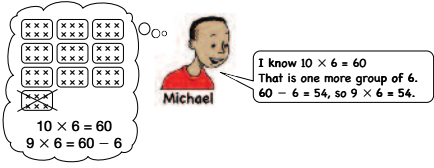
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17. Possible response: I agree with Shannon because both rectangles have 15 squares in them. If you cut out one of them it would fit exactly on top of the other one.
18. A–H. All are true except E; E is false.
I. They are turn-around facts so they both have the same product and are equal.

Name _____ Date _____

Reasoning Strategies

★19. Michael used the multiplication facts for the tens to solve 9×6 .



A. Show how to use Michael's strategy to solve 9×7 .

B. Show how to use 9×5 to solve 9×7 .

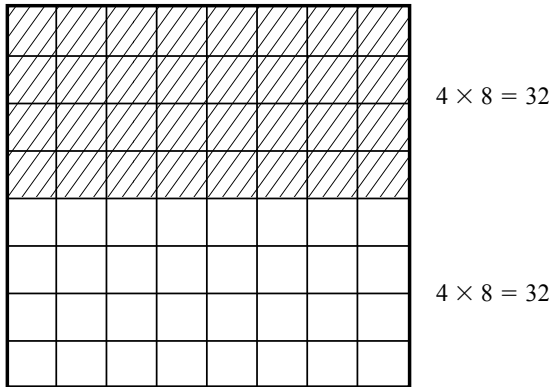
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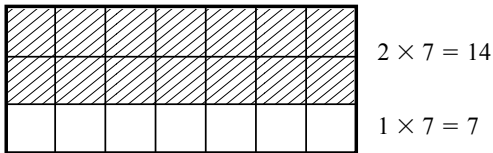
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19. A. $10 \times 7 = 70, 70 - 7 = 63$
B. Seven is two more than five, 9×5 is 45 and two more nines is 18, $45 + 18 = 63$.

20. A. $8 \times 8 = 64$; Break 8 into $4 + 4$,
 $4 \times 8 = 32$, $32 + 32 = 64$.

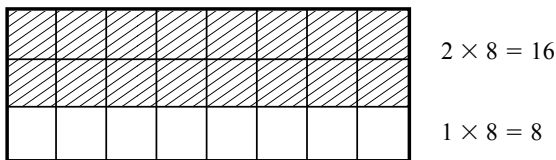


- B. $3 \times 7 = 21$; break 3 into $2 + 1$, $2 \times 7 = 14$,
 $1 \times 7 = 7$ and $7 + 14 = 21$.

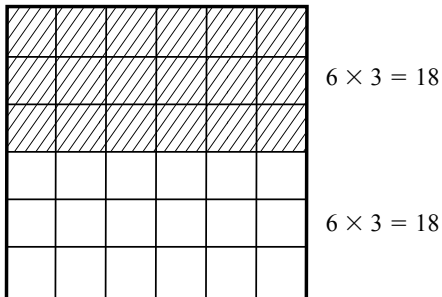


21. Possible responses:

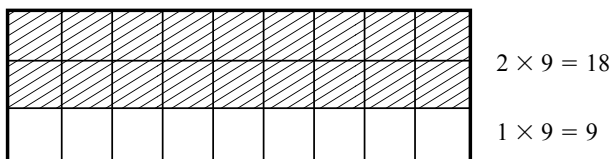
- A. $3 \times 8 = 24$; $2 \times 8 = 16$ and one more 8 is 24.



- B. $6 \times 6 = 36$; six is three plus three, use doubles $6 \times 3 = 18$, $18 + 18 = 36$.



- C. $3 \times 9 = 27$; break 3 into $2 + 1$, $2 \times 9 = 18$ and one more 9 equals 27.



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★20. Look at Jessie's strategy for solving 8×4 .

				8							
2											
2											

$$\begin{array}{r} 16 \\ + 16 \\ \hline 32 \end{array}$$

Jessie

A. Show how to use Jessie's strategy to solve 8×8 .

B. Show how to use a break-apart strategy to solve 3×7 .

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■21. Each rectangle represents a multiplication fact. Use facts you know to find a strategy for solving each multiplication problem. Show your strategy.

A.

B.

C.

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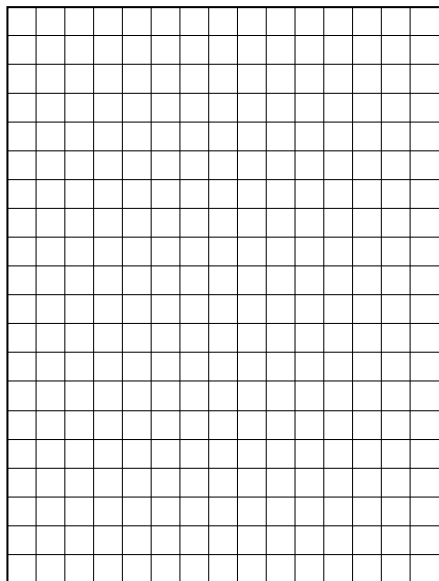
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■ 22. A. List three multiplication facts you are trying to figure out.

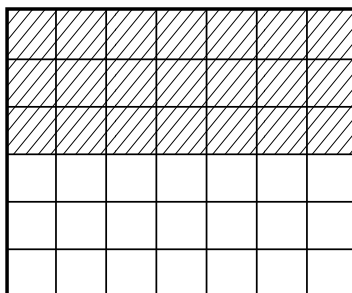
B. Use the grid below to find a strategy to solve this list of facts.



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22. Answers will vary. Possible response for 6×7 :
I broke 6 into $3 + 3$. I know $3 \times 7 = 21$ and
 $21 + 21 = 42$, so $6 \times 7 = 42$.



$3 \times 7 = 21$

$3 \times 7 = 21$

$21 + 21 = 42$