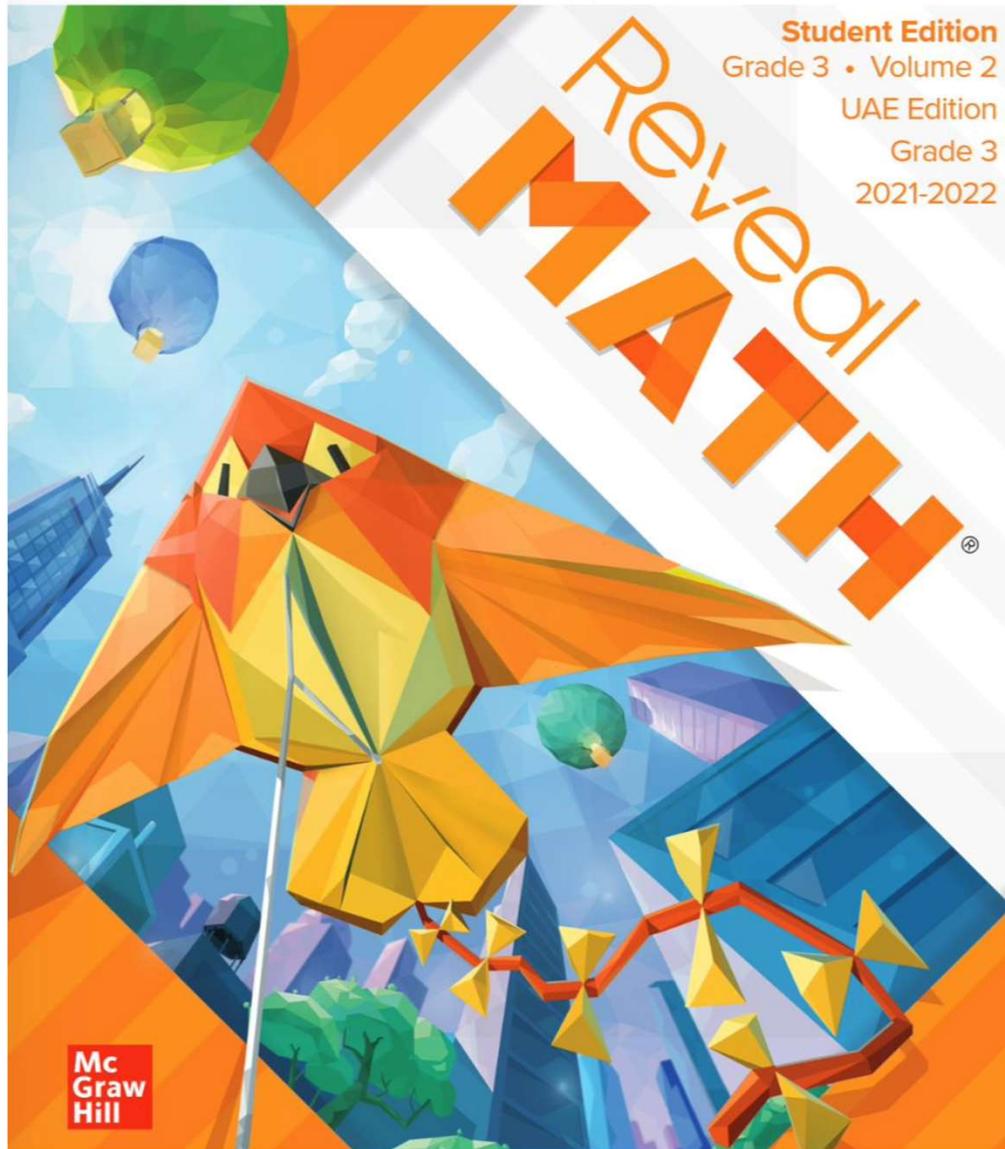




UNITED ARAB EMIRATES  
MINISTRY OF EDUCATION



Grade 3 Unit 10 answers

Mrs. Noura Alobeidli

## Learn

A trading card album has 8 cards on each page.  
There are 60 pages full of cards.



**How can you determine the total number of cards in the album?**

A multiplication equation can represent the problem.

► **One Way** Use basic facts and place value.

$$60 \times 8 = c$$

$$60 \times 8 = 6 \text{ tens} \times 8$$

$$6 \times 8 = 48$$

$$6 \text{ tens} \times 8 = 48 \text{ tens}$$

$$48 \text{ tens} = 480$$

$$\mathbf{480} = c$$

► **Another Way** Decompose 60.

$$60 \times 8 = c$$

$$60 \times 8 = ?$$

$$\begin{array}{l} \wedge \\ 6 \times 10 \times 8 = ? \end{array}$$

$$6 \times 8 \times 10 = ?$$

$$\begin{array}{l} \vee \quad | \\ 48 \times 10 = \mathbf{480} \end{array}$$

**Math is... Structure**

Why do multiples of 10 always have a zero in the ones place?

Basic facts, place-value understanding, and patterns can be used to multiply with multiples of 10.

## Work Together

How can you determine the product of  $90 \times 5$ ?

Explain your thinking.

**Sample answer: I can use the basic fact  $9 \times 5 = 45$ , and then multiply 45 by 10;  $90 \times 5 = 450$ .**

## On My Own

Name \_\_\_\_\_

How can you use place value to multiply?

1.  $5 \times 40$

5  $\times$  4 tens = 20 tens

So,  $5 \times 40 = \underline{200}$ .

2.  $6 \times 50$

6  $\times$  5 tens = 30 tens

So,  $6 \times 50 = \underline{300}$ .

3.  $7 \times 90$

7  $\times$  9 tens = 63 tens

So,  $7 \times 90 = \underline{630}$ .

4.  $8 \times 30$

8  $\times$  3 tens = 24 tens

So,  $8 \times 30 = \underline{240}$ .

5. Nia uses 50 blocks to create a sculpture. Use place value to find how many blocks she uses to create 7 sculptures.

**$7 \times 5 \text{ tens} = 35 \text{ tens}; 35 \text{ tens} = 350; 350 \text{ blocks}$**

How can you decompose the multiple of 10 to multiply?

6.  $4 \times 90$

$4 \times \underline{9} \times 10$

36  $\times 10 = \underline{360}$

7.  $3 \times 70$

$3 \times \underline{7} \times 10$

21  $\times 10 = \underline{210}$

8.  $6 \times 40$

$6 \times \underline{4} \times 10$

24  $\times 10 = \underline{240}$

9.  $8 \times 50$

$8 \times \underline{5} \times 10$

40  $\times 10 = \underline{400}$

10. How can you use basic facts and place value to show how to find  $a = 7 \times 40$ ? Then solve for  $a$ .

**Sample answer:**

$$a = 7 \times 40$$

$$a = 7 \times 4 \text{ tens}$$

$$a = 28 \text{ tens}$$

$$a = 280$$

11. There are 30 markers in each package. Jacob buys 8 packages. How many markers does he buy?

$$8 \times 30 = 8 \times 3 \times 10; 240 \text{ markers}$$

12. **STEM Connection** Hiro tracks turtles for 3 nights. He sees the same number of turtles each night. If he saw 150 turtles, how many did he see each night? Explain your answer.

**50 turtles; Sample explanation:  $3 \times 5$  is 15, and  $3 \times 50 = 150$ . So, he saw 50 turtles each night.**



13. **Extend Your Thinking** Write two multiplication equations that use a multiple of 10 and have a product of 180.

**Sample answers:  $6 \times 30 = 180$ ;  $2 \times 90 = 180$**

## Reflect

How can you find the product of a 1-digit number and a multiple of 10?

**Answers may vary.**

### Math is... Mindset

What actions helped you achieve your day's goal?

## Learn

What patterns do you see in the multiplication fact table?

X	0	1	2	3	4
0	0	0	0	0	0
1	0	1	2	3	4
2	0	2	4	6	8
3	0	3	6	9	12
4	0	4	8	12	16

One half of the multiplication fact table mirrors the other half of the multiplication fact table.

X	0	1	2	3	4
0	0	0	0	0	0
1	0	1	2	3	4
2	0	2	4	6	8
3	0	3	6	9	12
4	0	4	8	12	16

$$4 \times 3 = 12 \quad 3 \times 4 = 12$$

The order of the factors does not change the product. This is a property of multiplication.

Products of 4s facts are double the products of 2s facts.

X	0	1	2	3	4
0	0	0	0	0	0
1	0	1	2	3	4
2	0	2	4	6	8
3	0	3	6	9	12
4	0	4	8	12	16

$$4 \times 3 = 2 \times 3 + 2 \times 3$$

You can decompose 4s facts into two 2s facts using a property of multiplication.

You can find patterns with factors and products in the multiplication fact table.

Some of these patterns can be explained by properties of multiplication.

### Math is... Explaining

What patterns do you see in the table that involve doubling? Explain.

### Work Together

Why do the products with a factor of 3 follow a pattern that is even and odd?

**Sample answer: The product of two odd numbers is odd, but the product of an even and an odd number is even.**

## On My Own

Name \_\_\_\_\_

1. What patterns do you see with the multiples of 1 in the multiplication fact table?

**Sample answer: Any number times 1 equals itself.**

×	0	1	2	3	4	5	6
0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6
2	0	2	4	6	8	10	12
3	0	3	6	9	12	15	18
4	0	4	8	12	16	20	24
5	0	5	10	15	20	25	30
6	0	6	12	18	24	30	36

2. Keller notices that the numbers in the 2s column are the same as the numbers in the 2s row. How can you explain this pattern?

**Sample answer: They are the same because 2 can be the first or second factor in the multiplication equation and the product does not change.**

3. Use the multiplication fact table. What pattern do you notice with the multiples of 6?

**Sample answer: The products that have a factor of 6 are all even.**

4. Use the multiplication fact table. What pattern do you notice with the multiples of 5?

**Sample answer: The pattern is odd and even. The products are odd and end in 5, then even and end in 0.**

5. How do multiples of 10 relate to multiples of 5? Explain.

**Sample answer: When you double the multiple of 5, you get a multiple of 10.**

6. **Error Analysis** Eva says that the product of  $8 \times 6$  is 49. Do you agree? How can you use patterns to explain your thinking?

**No. Sample answer:  $8 \times 6$  is 48 because when you double the product of  $4 \times 6$ , you get 48,  $24 + 24 = 48$ .**

7. Use the multiplication fact table. What patterns do you see with the products of 0?

**Sample answer: Any multiplication fact with a factor of 0 has a product of 0.**

8. How can you use patterns to predict the product?

a. Circle the multiplication facts that will have an even product.

$4 \times 5$

$3 \times 6$

$1 \times 9$

$2 \times 4$

$5 \times 7$

$5 \times 2$

$7 \times 8$

$10 \times 6$

b. Explain why the products are even.

**Sample answer: The products are even because at least one of the factors is even.**

9. Are the products of 6s facts double the products of 2s facts? Explain.

**No. Sample answer: The products of 6s facts are double the products of 3s facts.**

Fill in the blank with *always*, *sometimes*, or *never*.

10. Products of 6s facts are always double the products of 3s facts.

11. Products of 7s facts are sometimes even.

12. Products of 4s facts are never odd.

13. **Extend Your Thinking** How can you explain the pattern shown?

**Sample answer: These are the result of multiplying a number by itself.**

$\times$	0	1	2	3	4	5	6
0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6
2	0	2	4	6	8	10	12
3	0	3	6	9	12	15	18
4	0	4	8	12	16	20	24
5	0	5	10	15	20	25	30
6	0	6	12	18	24	30	36

## Reflect

How can knowing whether a product will be even or odd help you?

**Answers may vary.**

### Math is... Mindset

What were some ways you built a positive relationship with classmates today?

## Learn

Five basketball players each make 3 baskets.  
Each of the baskets is worth 2 points.

**How many points do the players score?**

You can write an equation to solve.  $5 \times 3 \times 2 = ?$

### ▶ One Way

Multiply the product of the first two factors by the last factor.

$$\begin{array}{r} 5 \times 3 \times 2 = ? \\ \swarrow \quad \downarrow \\ 15 \times 2 = 30 \end{array}$$

### ▶ Another Way

Multiply the first factor by the product of the second two factors.

$$\begin{array}{r} 5 \times 3 \times 2 = ? \\ \downarrow \quad \swarrow \\ 5 \times 6 = 30 \end{array}$$

The products are the same.

You can group factors in different ways. Grouping the factors in different ways does not change the product. This is a property of multiplication.

### Math is... Explaining

What might help you choose how to group the factors?

## Work Together

Kate ran 2 laps around a track 2 days a week. She did this for 3 weeks in a row. How can you determine the number of laps she ran in different ways?

**12 laps; Sample answer:  $2 \times 2 \times 3 = ?$ ;  $2 \times 2 = 4$ ,  $4 \times 3 = 12$ ;  $2 \times 3 = 6$ ,  $6 \times 2 = 12$**

## On My Own

Name \_\_\_\_\_

How can you solve the equation two ways?

1.  $4 \times 3 \times 2 = ?$

$$\begin{array}{r} \underline{4 \times 3 \times 2} = ? \\ \underline{12 \times 2} \\ \underline{24} \end{array}$$

$$\begin{array}{r} \underline{4 \times 3 \times 2} = ? \\ \underline{4 \times 6} \\ \underline{24} \end{array}$$

2.  $3 \times 3 \times 4 = ?$

$$\begin{array}{r} \underline{3 \times 3 \times 4} = ? \\ \underline{9 \times 4} \\ \underline{36} \end{array}$$

$$\begin{array}{r} \underline{3 \times 3 \times 4} = ? \\ \underline{3 \times 12} \\ \underline{36} \end{array}$$

3.  $2 \times 3 \times 3 = ?$

$$\begin{array}{r} \underline{2 \times 3 \times 3} = ? \\ \underline{6 \times 3} \\ \underline{18} \end{array}$$

$$\begin{array}{r} \underline{2 \times 3 \times 3} = ? \\ \underline{2 \times 9} \\ \underline{18} \end{array}$$

4.  $5 \times 2 \times 3 = ?$

$$\begin{array}{r} \underline{5 \times 2 \times 3} = ? \\ \underline{10 \times 3} \\ \underline{30} \end{array}$$

$$\begin{array}{r} \underline{5 \times 2 \times 3} = ? \\ \underline{5 \times 6} \\ \underline{30} \end{array}$$

### How can you solve the problem two ways?

5. Mrs. Dean makes 2 sandwiches for her 3 children 4 days a week. How many sandwiches does Mrs. Dean make each week?

**24 sandwiches; Sample answer:  $2 \times 3 \times 4$ ;  $2 \times 3 = 6$  and  $6 \times 4 = 24$ , or  $3 \times 4 = 12$  and  $2 \times 12 = 24$ .**

6. Jose paints 2 paintings in 1 day each week. How many paintings does he paint in 7 weeks?

**14 paintings; Sample answer:  $2 \times 1 \times 7$ ;  $2 \times 1 = 2$  and  $2 \times 7 = 14$ , or  $1 \times 7 = 7$  and  $7 \times 2 = 14$ .**

7. Candice works 3 hours in 1 day. She works 3 days each week. How many hours does she work in 6 weeks? in 9 weeks?

**$3 \times 3 \times 6 = 54$ ;  $3 \times 3 \times 9 = 81$**

8. **Error Analysis** Korena's work is shown. Do you agree with her solution? Explain.

**No. Sample answer: Korena should have multiplied 10 by 4.**

$$\begin{aligned}5 \times 2 \times 4 &= ? \\5 \times 2 &= 10 \quad 2 \times 4 = 8 \\10 \times 8 &= 80 \\5 \times 2 \times 4 &= 80\end{aligned}$$

9. **Extend Your Thinking** You can group the factors  $4 \times 7 \times 10$  two different ways. Explain which is more efficient for you.

**Sample answer:  $4 \times 7 = 28$ ,  $28 \times 10 = 280$ ; Explanations may vary.**

### Reflect

Why might you group the factors in different ways when multiplying three numbers?

**Answers may vary.**

#### Math is... Mindset

What made you feel confident about your work today?

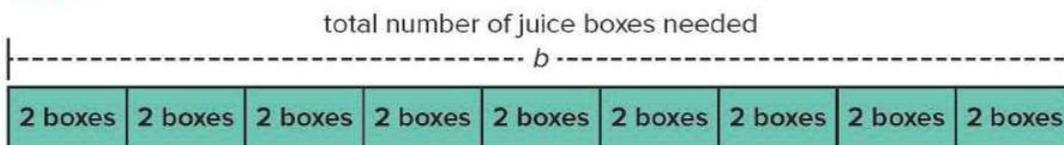
## Learn

Mason brings juice boxes to soccer practice. He needs 2 juice boxes for each of the 9 players. The juice boxes are in packages of 6.



**How many packages of juice boxes does Mason need to bring?**

**Step 1** Find the total number of juice boxes he needs.

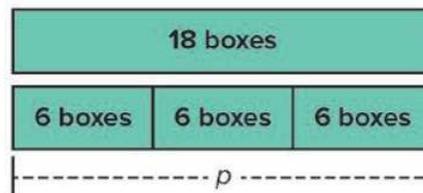


$$9 \times 2 = b$$

$$18 = b$$

**Step 2** Then find the number of packages.

Mason needs to bring 3 packages of juice boxes.



$$18 \div 6 = p$$

$$3 = p$$

You can represent a two-step problem with more than one multiplication or division equation. Use a letter to represent the unknown in each equation.

### Math is... Exploring

How can you use the bar diagram to answer the question?

## Work Together

Last week, Mason brought 28 watermelon slices to soccer practice. Each of the 7 players got the same number of slices. This week, Mason doubles the number of slices for each player. Write equations with a letter for the unknown to find the number of watermelon slices he gives each player this week.

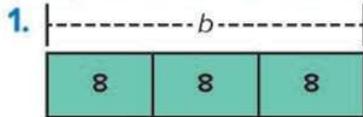
$$28 \div 7 = s; 4 \times 2 = b; b = 8; 8 \text{ watermelon slices}$$

## On My Own

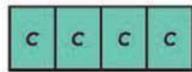
Name \_\_\_\_\_

What equation represents the bar diagram?

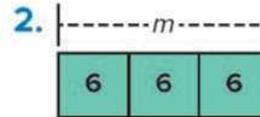
Sample answers shown.



$$3 \times 8 = b$$



$$24 \div 4 = c$$



$$3 \times 6 = m$$



$$18 \div p = 9$$

How can you use equations with letters for the unknowns to solve the problem?

3. Jerry's mother brings orange slices to dance class. She cut each orange into 4 slices. There are 2 slices for each of the 8 dancers. How many oranges did his mother cut?

**4 oranges; Sample answer:  $2 \times 8 = t$ ,  $16 \div 4 = f$**

4. Connie's photo album has 6 pages and each page has 6 photos. She decides to put all the photos already in her album on just 4 pages. She puts the same number of photos on all 4 pages. How many photos will she put on each page?

**9 photos; Sample answer:  $6 \times 6 = a$ ,  $36 \div 4 = p$**

5. How do you know when to multiply and when to divide to solve a real-world problem? Explain your reasoning.

**Sample answer: When you add equal groups, you multiply. When you make equal groups or the same number of objects in each equal group, you divide.**

**How can you use equations with letters for the unknowns to solve the problem?**

6. Lana brings home 48 shells from the beach. She divides the shells into 6 equal groups and keeps 1 group for herself. Then she gives half of her group to her brother. How many shells does Lana give to her brother? **4 shells;**  
**Sample answer  $48 \div 6 = s, s \div 2 = 1$**

7. **STEM Connection** Hiro explored 12 shipwrecks with 4 robots. Each robot explored the same number of shipwrecks. One of the robots brought back 2 items from each wreck it explored. How many objects did it bring back?  
**6 objects; Sample answer  $12 \div 4 = s, s \times 2 = m$**



8. Francine uses 24 yards of fabric to make 8 blankets. She uses the same amount of fabric for each blanket. How many yards of fabric does she need to make 4 blankets?  
**12 yards; Sample answer  $24 \div 8 = y, y \times 4 = b$**
9. Kyle buys 9 spools of ribbon. Each spool has 4 yards of ribbon on it. If she uses 6 yards of ribbon per bow, how many bows can she make?  
**6 bows; Sample answer  $9 \times 4 = s, s \div 6 = b$**
10. **Extend Your Thinking** Mrs. Tyler buys boxes of pencils. She gives 5 pencils to each student. 8 students get pencils. How many boxes could she have bought and how many pencils could be in each box?  
**Sample answer: 4 boxes; 10 pencils;  $8 \times 5 = p, p \div 4 = t$**

 **Reflect**

How can you solve a two-step word problem involving multiplication and division?

**Answers will vary.**

**Math is... Mindset**

How do you know that you made good decisions today?

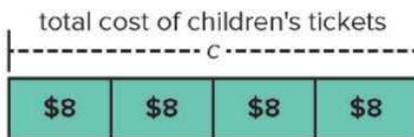
## Learn

Paulo needs to buy 4 children's tickets and 1 adult ticket for a family trolley ride.

**How much money will he spend?**

TICKETS	
Adults	\$16
Seniors	\$11
Children	\$8

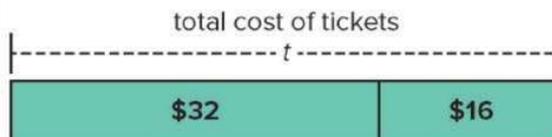
**Step 1** Find the total cost of the children's tickets.



$$4 \times 8 = c$$

$$32 = c$$

**Step 2** Then find the total amount they spend.



$$32 + 16 = t$$

$$48 = t$$

Paulo will spend \$48.

You can represent a two-step problem with more than one equation. You can use a letter to represent the unknown in each equation.

### Math is... Choosing Tools

Does the first bar diagram represent the solution to the problem? Explain.

## Work Together

Martin has a goal to sell 42 shirts for a school fundraiser. He has already sold 12 shirts. He has 5 weeks to sell the remaining shirts. Martin sells the same number of shirts each week. How many shirts does he need to sell each week to meet his goal?

**6 shirts; Sample answer:  $42 - 12 = s$ ,  $30 \div 5 = w$**

## On My Own

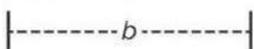
Name \_\_\_\_\_

What equation represents the bar diagram?

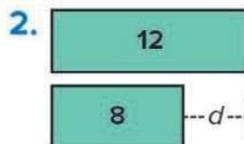
Sample answers shown.



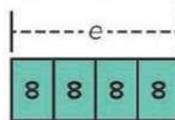
$$25 \div 5 = a$$



$$5 + 2 = b$$



$$12 - 8 = d$$



$$4 \times 8 = e$$

How can you use equations with letters for the unknowns to solve the problem?

3. All 5 people in Marcela's family order a sandwich and a drink. The total cost of the drinks is \$9. How much does Marcela's family pay for lunch?

**\$49; Sample answer  $5 \times 8 = s$ ,  $40 + 9 = c$**

MENU	
Sandwiches	\$8
Salads	\$6

4. The garden center sells plants in packs of 6. Felix buys 9 packs and 16 individual plants. How many plants does he buy in all?

**70 plants; Sample answer  $6 \times 9 = p$ ,  $54 + 16 = t$**

5. Tiffany shares 28 cherries equally among 4 friends. Then she gives each friend 7 additional pieces of fruit. How many pieces of fruit does each friend receive?

**14 pieces of fruit; Sample answer  $28 \div 4 = c$ ,  $7 + 7 = f$**

6. How do you choose what the letter in your equation represents?

**Sample answer: The question tells what I need to find. The letter represents the unknown number.**

7. At recess, 34 children lined up to play volleyball. Then 4 children decided to play basketball instead. The rest of the children made teams of 6 people. How many teams were there? Show your work.

**5 teams; Sample answer  $34 - 4 = c$ ;  $30 \div 6 = t$**

8. Nathan had 8 strawberries. His brother had 12 strawberries. He and his brother shared them equally. How many strawberries did Nathan eat? Show your work.

**10 strawberries; Sample answer  $8 + 12 = s$ ;  $20 \div 2 = a$**

9. **Error Analysis** Peter works for 3 hours each day for 5 days in a week. Then he works 4 hours on another day. His work shows how he calculates his total work hours. How can you help him understand his mistake? Explain.

$3 + 4 = m$	$m = 7$
$7 \times 5 = t$	$t = 35$

**Sample answer: He should have multiplied 3 by 5 first and then added 4.**

10. **Extend Your Thinking** Is the order in which you complete the steps to solve a two-step word problem important? Explain.

**Yes. Sample answer: You have to do the steps in order to get the correct answer. Doing them out of order means that you might be using the wrong numbers when you add, subtract, multiply, or divide.**

## Reflect

How can you solve a two-step word problem involving any of the four operations?

**Answers may vary.**

**Math is... Mindset**

How did you show others you respect their ideas?

## Learn

There are 8 cups of colored pencils in Tate's classroom. There are 9 pencils in each cup. Tate needs to give 29 colored pencils to another class. He thinks there will be 15 pencils left in his classroom.

**How can you determine whether his answer is reasonable?**

### Math is... Thinking

How could you organize the information in this problem?

**Step 1** You can use mental math.

$$8 \times 9 = p$$

$$72 = p$$

Tate's classroom has 72 colored pencils.

**Step 2** You can estimate.

$$72 - 29 = t$$

$$\begin{array}{c} \downarrow \quad \downarrow \\ 70 - 30 = t \end{array}$$

$$40 = t$$

Tate's classroom will have about 40 pencils left.

Estimate: 40    Tate's answer: 15

Tate's answer is not reasonable because it is not close to the estimate.

You can use mental computation and estimation to determine the reasonableness of an answer to a two-step problem.

## Work Together

Mr. Kim buys 5 adventure books for his class. Then he buys a mystery book. Is it reasonable to say he spent \$53? Explain why or why not.

**Yes. Sample answer: I can round 9 to 10 and multiply,  $5 \times 10 = 50$ . Then I can add,  $50 + 8 = 58$ . 58 is close to 53 so the answer is reasonable.**

### BOOKS

Mystery	\$8
Science	\$7
Adventure	\$9

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**Solve. Then use an estimate to show that your answer is reasonable.**

5. John has 7 packages of pencils. There are 9 pencils in each package. He donates 49 pencils to the school supply closet. How many pencils does John have left?

**14 pencils; Sample answer: My estimate is 10 and 10 is close to 14 so 14 is a reasonable answer.**

- 6 Evelyn has 80 beads. She uses 24 for a necklace. She wants to use the rest to make 8 bracelets with the same number of beads on each. How many beads will each bracelet have?

**7 beads; Sample answer: My estimate is 6 and 7 is close to 6 so 7 is a reasonable answer.**

7. **STEM Connection** Hiro designs a boat to carry research supplies. His boat carries 6 crates filled with 9 boxes each. It also carries 5 boxes of snacks. He thinks the boat carries 59 boxes. Is his answer reasonable? **Yes. Sample answer:**

**$6 \times 9$  is close to  $6 \times 10 = 60$ ;  
 $60 + 5 = 65$ ; 59 is close to 65.**



8. **Extend Your Thinking** Kara has a box of 30 crackers. She eats 3 and wants to give the rest to 5 friends to share equally. She estimates there are enough for each friend to get 5 crackers. Explain Kara's estimate. **Sample answer: Kara has 27 crackers to share. She could have used the compatible number 25 to estimate, and  $5 \times 5 = 25$ . Since she used a compatible number less than the actual number to estimate, so she has enough crackers to give each friend 5 crackers with some left over.**

### Reflect

How can you explain the reasonableness of a solution?

**Answers may vary.**

**Math is... Mindset**

What behaviors helped you be successful today?

# Unit Review

 Name \_\_\_\_\_

## Vocabulary Review

Choose the correct word(s) to complete each sentence.

bar diagram	product
pattern	multiple
factor	unknown

1. A missing number, or the number to be solved for, is called the **unknown**. (Lesson 10-4)
2. A(n) **factor** is a number that is multiplied by another number. (Lesson 10-2)
3. A(n) **multiple** is the product of that number and any whole number. (Lesson 10-1)
4. The **product** is the answer to a multiplication equation. (Lesson 10-2)
5. A(n) **pattern** is an arrangement or sequence of numbers according to a rule or structure. (Lesson 10-2)
6. A representation that shows the relationship between the numbers in a problem and the unknown is a(n) **bar diagram**. (Lesson 10-4)

## Review

7. Jenna counts 7 cars in the parking lot, and each car has 4 tires. She multiplies  $7 \times 4$  to find the total number of tires in the parking lot. Which is another way she could have found the total number of tires?

(Lesson 10-2)

- A.  $7 \times 2$
- B.  $7 \times 7$
- C.  $4 \times 4$
- D.  $4 \times 7$**

8. Complete the equation.

(Lesson 10-3)

$$\begin{array}{r} 2 \times 5 \times 7 = b \\ \underline{10} \times 7 = b \\ \underline{70} = b \end{array}$$

9. Which of the following shows a correct way to decompose  $60 \times 5$ ? (Lesson 10-1)

- A.  $10 \times 6 \times 5$**
- B.  $10 \times 6 + 5$
- C.  $10 + 6 \times 5$
- D.  $10 + 6 + 5$

10. Amanda buys 24 apples. She divides them equally among 6 bags. She gives away 2 bags of apples. How many apples does she give away? (Lesson 10-4)

**8 apples**

11. Shaina is shopping for school clothes. She wants to buy 5 t-shirts for \$6 each and a pair of shoes for \$20. She thinks that she will spend about \$30. Is this answer reasonable?

(Lesson 10-6)

- A. Yes, it is reasonable because  $5 + 6 = 11$ , which is about 10 and  $10 + 20 = 30$ .
- B. No, it is not reasonable because  $5 + 6 = 11$ , which is about 10 and  $20 - 10 = 10$ .
- C. No, it is not reasonable because  $5 \times 6 = 30$  and  $30 + 20 = 50$ .**
- D. No, it is not reasonable because  $5 \times 6 = 30$ , and  $30 \times 20$  is more than 30.

12. Explain how knowing  $2 \times 9$  can help find  $4 \times 9$ . (Lesson 10-2)

**Sample answer: You can double the product of  $2 \times 9$  to get  $4 \times 9$ . 18 doubled is 36, so  $4 \times 9 = 36$ .**

13. Complete the equation. (Lesson 10-3)

$$10 \times 4 \times 2 = a$$

$$\underline{10} \times 8 = a$$

$$\underline{80} = a$$

14. Fill in the correct missing numbers. (Lesson 10-1)

$$6 \times 8 = \underline{48} \quad 6 \times 80 = \underline{480}$$

$$9 \times 3 = \underline{27} \quad 9 \times 30 = \underline{270}$$

$$7 \times 4 = \underline{28} \quad 7 \times 40 = \underline{280}$$

15. Denise is organizing her colored pencils for art class. She has 5 packs of pencils with 8 pencils in each pack. She puts the colored pencils in groups of 4 pencils. How many groups of pencils can Denise make? (Lesson 10-4)

**10 groups**

16. Look at the restaurant menu.

Food Item	Cost
Hot Dog	\$2
Side Salad	\$4
Chicken Tenders	\$5
Water	\$1

Which statements about the costs of food are true? Choose all that are correct. (Lesson 10-5)

- A. Buying 2 orders of chicken tenders and 1 hot dog would cost \$7.
- B. If you pay for 2 side salads with \$10, you will get \$2 in change.
- C. Three hot dogs cost more than 2 side salads.
- D. \$6 would be enough to buy 2 hot dogs and 2 waters.

17. What pattern do you see in the products of the 7s facts? Write *even*, *odd*, or *even and odd*.

(Lesson 10-2)

The products of the 7s facts are **even and odd**.

## Performance Task

Hiro plans to purchase some diving equipment for when he can work in the ocean. He will need batteries for his dive computer, mouth pieces for his regulator, and hoods for his wet suit.



Equipment	Cost
batteries	\$4
mouth pieces	\$5
hoods for wet suit	\$7

**Part A:** If Hiro buys 2 of each piece of equipment, how much will he spend? Show your work.

**\$32; Sample work:**  $4 + 5 + 7 = 16$ ,  $16 \times 2 = 32$

**Part B:** If Hiro buys 3 mouth pieces and then purchases a mask for \$24, how much would he spend?

**\$39; Sample work:**  $3 \times 5 + 24 = 39$

**Part C:** Hiro decided to buy multiples of one kind of equipment. He places an order and then decides he needs more. The first order was \$28, and the second order was \$14. What piece of equipment did he buy and how many? Explain how you found your answer.

**He bought 6 hoods. Sample answer:** First I added how much he spent on the two orders  $28 + 14 = 42$ . Then I divided  $42 \div 7 = 6$ .

### Reflect

What are some different strategies you can use to make it easier to multiply?

**Answers may vary.**

Unit 10

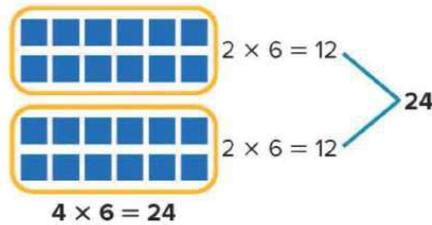
# Fluency Practice

Name \_\_\_\_\_

## Fluency Strategy

You can decompose 4s facts into two 2s facts to multiply.

Find the product of of the 2s facts.



Then double the product.

- $4 \times 9 = 2 \times \underline{9} + 2 \times \underline{9}$   
 $4 \times 9 = \underline{18} + \underline{18}$   
 $4 \times 9 = \underline{36}$

## Fluency Flash

How can you write a 2s fact that represents one array and a 4s fact that represents both arrays?

- $\underline{5} \times 2 = \underline{10}$   
 $\underline{5} \times 4 = \underline{20}$

- $2 \times \underline{7} = \underline{14}$   
 $4 \times \underline{7} = \underline{28}$

## Fluency Check

What is the product?

4.  $4 \times 6 =$  24

5.  $9 \times 4 =$  36

6.  $10 \times 3 =$  30

7.  $5 \times 6 =$  30

8.  $7 \times 4 =$  28

9.  $7 \times 10 =$  70

10.  $10 \times 8 =$  80

11.  $4 \times 8 =$  32

12.  $5 \times 3 =$  15

13.  $4 \times 3 =$  12

14.  $5 \times 4 =$  20

15.  $2 \times 10 =$  20

16.  $9 \times 5 =$  45

17.  $2 \times 4 =$  8

## Fluency Talk

How can you use doubling to multiply by 4?

**Sample answer: Multiply the other factor by 2 and then double the product.**

What pattern can help you multiply by 5?

**Sample answer: The product of 5 and any whole number ends in 0 or 5.**