

Outcomes and key vocabulary of chapter one:

Outcomes

At the end of chapter one, your child will be able to:

Lessons 61 & 62

- Explain the associative property of multiplication.
- Apply the associative property of multiplication to solve problems.
- Explain the distributive property of multiplication.
- Apply the distributive property of multiplication to solve problems.
- Collaborate to define math terminology in his/her own words.

Lesson 63

- Apply strategies to estimate products.
- Apply properties and strategies to solve multiplication problems.
- Explain chosen problem-solving strategies.

Lessons 64 & 65

- Explain the relationship between multiplication and division.
- Solve multiplication and division problems with an unknown number.
- Explain how he/she can use the relationship between multiplication and division to solve problems.
- Identify a variety of multiplication and division problem-solving strategies.
- Apply more than one strategy to solve multiplication and division problems with an unknown number.
- Justify the use of preferred problem-solving strategies.

Lesson 66

• Solve perimeter problems involving an unknown side length.

Lessons 67 to 70

- Solve two-step story problems involving addition, subtraction, multiplication, or division.
- Explain the strategies he/she use to solve complex story problems.
- Analyze solutions to two-step problems to identify and explain the errors made.
- Explain the benefits of error analysis in improving thinking and learning.

Distributive property

- Apply multiple strategies to solve two-step story problems.
- Justify problem-solving strategies.
- Write two-step problems involving any operation.

Key vocabulary

- Associative property

Factors

- Parentheses
- Addend

• Bar model Estimation

- Fact family
- Quotient
- Inverse Strategy

• Width

- Perimeter
- Area

Product

Multistep problem

Length

Properties of multiplication

(Associative property - Distributive property)

Learn 1 Associative property of multiplication

- You can use associative property when you multiply 3 or more numbers, you can choose which 2 numbers you want to multiply first using parentheses.
- The Associative (grouping) Property of Multiplication says that you can change the grouping of the factors, and the product will be the same.

Example 1

Show three ways to find $3 \times 2 \times 4$



Remember

Commutative property

$$2 \times 4 = 4 \times 2$$

Solution 🗸



First way:

Multiply 3 and 2 first.

3x2x4

$$= (3 \times 2) \times 4$$
$$= 6 \times 4 = 24$$

 $(3 \times 2) \times 4$

Second way:

Multiply 2 and 4 first.

3x2x4

 $= 3 \times (2 \times 4)$

 $= 3 \times 8 = 24$

 $3 \times (2 \times 4)$

Third way:

Change the order and multiply 3 and 4 first.

3 x 2 x 4

 $= 3 \times 4 \times 2$

 $= (3 \times 4) \times 2$

= 12 \times 2 = 24

 $(3 \times 4) \times 2$ **= 24**

Math tip

To find 12×2 you can use:

- Repeated addition $12 \times 2 = 12 + 12 = 24$
- Skip counting by 2s: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, (24).



Use parentheses and show three ways to find $2 \times 5 \times 3$.

$$2 \times 5 \times 3$$

$$2 \times 5 \times 3$$

Notes for parents

· Remind your child with commutative property of multiplication which says that "you can multiply in any order and the product will be the same".

Learn 2 Distributive property of multiplication

 Distributive property tells us we can divide "break apart" a multiplication problem into two or more smaller problems, then add together their products and get the final answer.

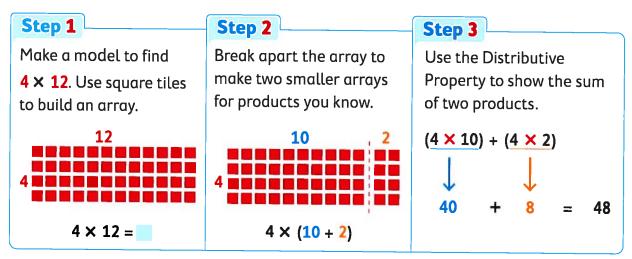
Example 2

Multiply 4 x 12

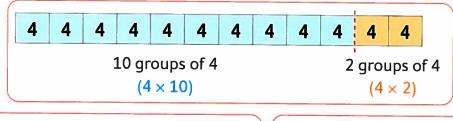
Solution 🗸

There are more than one correct way to break apart.

One Way: Using array



Other ways:

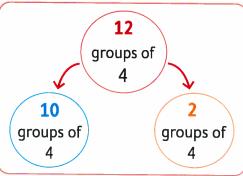


$$4 \times 12 = 4 \times (10 + 2)$$

$$= (4 \times 10) + (4 \times 2)$$

$$= 40 + 8$$

$$= 48$$



• Tell your child that he/she can use distributive property to solve problems that involve large numbers.

Example 3

Use the properties and mental math to multiply 8×12 .

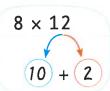
Solution V



•
$$8 \times 12 = 8 \times (10 + 2)$$

= $(8 \times 10) + (8 \times 2)$
= $80 + 16$
= 96

Think: 12 = 10 + 2Distributive property





• By using bar model

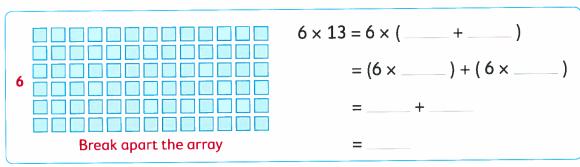
8	8	8	8	8	8	8	8	8	8	8	8	
10 groups of 8 (8 × 10)			l lace				2 gr	oup:	s of 8 <mark>2)</mark>			

$$8 \times 12 = 8 \times 10 + 8 \times 2$$

= 80 + 16 = 96

Check

Multiply 6 × 13



Notes for parents

• Ask your child to show 7 × 11 using array and bar model and find the product.

Exercise

1

Properties of multiplication

(Associative property - Distributive property)

On Lessons 61 & 62

First: Exercises on Associative Property

1 Write a suitable number.

a.
$$(2 \times 1) \times 3 = 2 \times (1 \times ...)$$

b.
$$(3 \times 2) \times 6 =$$
 $\times (2 \times 6)$

c.
$$(5 \times 2) \times 4 = (5 \times 2) \times 2$$

d.
$$(4 \times 3) \times 1 = 4 \times ($$
_____ $\times 3)$

e.
$$(3 \times 2) \times 3 = (3 \times 3) \times$$

f.
$$(5 \times 1) \times 6 = ($$
 $\times 1) \times 5$

2 Match.

$$\mathbf{a.} \qquad (3 \times 2) \times 4$$

b.
$$(3 \times 1) \times 2$$

$$3 \times (1 \times 2)$$

$$(4 \times 1) \times 2$$

3 Put (\checkmark) to the correct statement or (X) to the incorrect statement.

a.
$$4 \times 2 \times 5 = (4 \times 2) + 5$$

b.
$$2 \times 6 \times 3 = 2 \times (6 \times 3)$$

c.
$$(5 \times 4) \times 2 = 20 \times 2$$

d.
$$3 \times (2 \times 3) = 3 \times 5 = 15$$

e.
$$5 \times (4 \times 6) = (5 \times 4) \times 6$$

4 Find each product. Tell another way to multiply using associative property.

a.



2

11=

 $(4 \times 2) \times 1$

× 1 =

 $4 \times (2 \times 1)$

= 4 × ____ = __

b.

2

5 3

11=

 $(3 \times 5) \times 2$

= ____ × 2 =

 $3 \times (5 \times 2)$

= 3 × ____ = ___

c.

4

5

11=

 $(4 \times 5) \times 2$

= ____ × 2 = __

 $4 \times (5 \times 2)$

= 4 × ____ = __

d.

6

1

2

 $(6 \times 2) \times 1$

= ____ × 1 = ___

6 × (2 × 1)

= 6 × ____ = __

e.

3

4

 $(4 \times 5) \times 3$

= ____ × 3 = _

 $4 \times (5 \times 3)$

= 4 × ____ = __

5 Find the product. Write another way to group the factors.

 $a. (3 \times 2) \times 2$

=

b. $4 \times (3 \times 3)$

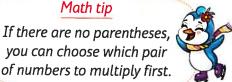
= _____

c. $5 \times (2 \times 4)$

= _____



Math tip



6 Use parentheses. Find the product.

$$\mathbf{a.} \quad 3 \times 1 \times 5$$

b.
$$1 \times 2 \times 3$$

c.
$$5 \times 2 \times 4$$

d.
$$4 \times 3 \times 1$$

e.
$$2 \times 2 \times 5$$

$$f. 2 \times 1 \times 6$$

$$\mathbf{g}$$
. $4 \times 2 \times 6$

$$h. 2 \times 3 \times 6$$

i.
$$3 \times 3 \times 4$$

7 Find.

- a. The product of 2 , 3 and 1
- **b.** The product of 0 , 3 and 2 _____
- **c.** The product of 6 , 1 and 2 _____
- d. The product of 2 , 4 and 2 _____
- e. The product of 5 , 2 and 4 _____
- Does 9×8 have the same product as $3 \times 8 \times 3$? Explain.
- If you know the product of $4 \times 5 \times 3$, do you also know the product of $3 \times 5 \times 4$? Explain.

Second: Exercises on Distributive Property



10 Break apart the following bar models according to the distributive property equations.

- a. $6 \times 8 = (6 \times 2) + (6 \times 6)$
- $12 \times 9 = (12 \times 4) + (12 \times 5)$
- C. $9 \times 7 = (9 \times 1) + (9 \times 6)$
- d. $4 \times 6 = (4 \times 2) + (4 \times 4)$
- e. $7 \times 6 = (7 \times 3) + (7 \times 3)$
- f. $8 \times 8 = (8 \times 3) + (8 \times 5)$

111 Write the distributive property equations of each.

- a. = (____× ____) + (___× ____)
- 7 × ____ = ___ × (____ + ____) | ___ × ___ = ___ × (___ + ___) = (____ × ____) + (___ × ____)
- 11 11 11 11 11 C. 11 = (____ × ___) + (___ × ___)
 - × ____ = ___ × (___ + ___) | ___ × __ = __ × (___ + ___) = (____×___) + (___×___)

8 8 8

6 6 6 6 e. 6 × ____ = ___ × (____ + ___) = (____ × ____) + (___ × ____)

d. 8

8

8

12 Break apart the following bar models. Use the distributive property to complete the equations and find the product.



a. 6 6 6 6 6 6 6 6

= (×) + (×)

= (+)

b. 8 8 8 8 8 8

= (×) + (×)

= ____+ ___ = ____

C. 9 9 9 9 9 9 9

____× ___ = ____× (____+ ___)

= (____ × ___) + (___ × ___)
= _ + _ =

d. 5 5 5 5 5 5 5

× = × (+)

= (____× ___) + (___× ___)

13 Complete.

a. $8 \times 6 = 8 \times (4 + \dots)$

c. $14 \times 7 = 7 \times (----+4)$

- **b.** $9 \times 5 = ---- \times (3 + 2)$
- **d.** $15 \times 6 = 6 \times (10 + \dots)$
- **e.** 3 × 16 = 3 × (10 + ----) = (----- × -----) + (----- × -----) = ----- + ---- = -----
- **f.** 5 × 12 = 5 × (+) = (×) + (×) = + =
- **g.** 4 × 13 = 4 × (+ -) = (×) + (×) = + = -
- **h.** 7 × 12 = 7 × (-----+ -----) = (-----× -----) + (-----× -----) = -----+ ----=

14 Complete the following as the example.

Example

$$5 \times 17$$
 = $(5 \times 10) + (5 \times 7)$
 $= 50 + 35 = 85$

15 Use the distributive property to find each product. Solve in two ways.

α.

9 × 7

b.

8 × 11

First way —

C.

 13×9

First way

Second way

16 Choose the correct answer.

a.
$$6 \times 15 = (6 \times 5) +$$

b.
$$3 \times - - = (3 \times 7) + (3 \times 3)$$

c.
$$8 \times 16 = (8 \times 10) + (---- \times 6)$$

d.
$$(5 \times 10) + (5 \times 2) =$$

e.
$$(4 \times 1) + (4 \times 6) = ----$$

f.
$$(5 \times 7) + (5 \times 8) =$$

$$(6 \times 1 \text{ or } 6 \times 10 \text{ or } 6 \times 5)$$

$$(5 \times 21 \text{ or } 5 \times 12 \text{ or } 5 \times 102)$$

$$(5 \times 10 \text{ or } 5 \times 12 \text{ or } 5 \times 15)$$

17 Use the distributive property to complete the following equations and find the product.



a.
$$7 \times 8 = \underline{\qquad} \times (4 + \underline{\qquad})$$

$$= (7 \times 4) + (\underline{\qquad} \times \underline{\qquad})$$

$$= \underline{\qquad} + \underline{\qquad} =$$

b.
$$9 \times 6 = \underline{\qquad} \times (\underline{\qquad} + 1)$$

$$= (\underline{\qquad} \times \underline{\qquad}) + (\underline{\qquad} \times 1)$$

$$= \underline{\qquad} + \underline{\qquad} =$$

c.
$$10 \times 12 = 10 \times (___ + ___)$$

= $(__ \times __) + (10 \times __)$
= $_ + __ = ___$

Challenge

18 Circle the equations below that have the same values as $(8 \times 5) \times 2$.

$$8 \times (5 \times 2)$$

19 Circle the equations below that have the same values as $5 \times (10 \times 3)$.

$$5 \times 30$$

$$(5 \times 3) \times 10$$

20 Draw •• if the sentence is true, and draw •• if it is wrong. Explain, then correct the mistakes.

a.
$$3 \times 5 = (3 \times 2) + (3 \times 5)$$

b.
$$2 \times 8 = (2 \times 6) + (2 \times 2)$$

c.
$$4 \times 11 = (4 \times 10) + 4$$

d.
$$12 \times 5 = (5 \times 5) + (5 \times 5)$$

e.
$$(9 \times 2) \times 5 = 9 \times 10$$

f.
$$4 \times (10 \times 3) = 4 \times 13$$

Estimate products

Learn

- Estimation does not give the exact answer but gives a closer answer.
- There are 7 boxes, each box contains 6 balls.
 How many balls are there in all?



The actual problem is 7×6



Nada knows that

$$5 \times 5 = 25$$

So, she said that the product must be greater than 25



Yasser supposed 6 as 5 and multiplied them

$$7 \times 5 = 35$$

So, he said that the product should be a little more than 35



Amira supposed 7 as 10 and multiplied them

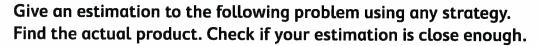
$$10 \times 6 = 60$$

So, she said that the actual product must be less than 60

The actual product is 42,
 Yasser gives the closest estimation and it is acceptable estimation.



Check



Estimation

$$6 \times 8$$

Actual product

Notes for parents

• Tell your child that estimation tells about how many not the actual value.

Exercise

Estimate products

On Lesson 63

1 Estimate the answer of the following problems and use your thinking for how you found that estimate, then solve each problem using any strategy or property that helps you.

α._

	Fcti	ma	tion

 9×3

Actual product

Estimation

 8×4

Actual product

Estimation

6 x 9

Actual product

2 Estimate the answer of the following problems.

$$a. 7 \times 4$$

b. 5×8

c. 9×7

_1	
П	
-	

 8×3

e. 6×5

f. 2×8



g. 7×6

h. 5×7

i. 4×9



3 Estimate the answer, then solve each problem as the example.

-Example- $4 \times 6 \times 5$ **Estimation Actual product** Suppose 4 as 5, use associative property. $4 \times (6 \times 5)$ Associative property $(5 \times 6) \times 5$ $=4\times$ 30 $\times 5 = 150$ = 120The answer must be less than 150 **a.** ____ $3 \times 7 \times 2$ **Estimation Actual product** b. **Estimation** $8 \times 5 \times 4$ **Actual product Estimation** $2 \times 6 \times 9$ **Actual product**

4 Estimate the answer, then solve each problem as the example.

-Example-

Estimation

9 x 13

Actual product

The actual product

Suppose 13 as 10

$$9 \times 13 = 9 \times (10 + 3)$$
 Distributive property

$$=(9 \times 10) + (9 \times 3)$$

a. _

Estimation

 18×3

Actual product

b.

Estimation

 15×8

Actual product

C.

Estimation

 9×12

Actual product

5 Write the equation you are trying to so Estimate the answer, solve each proble that helps you.	olve in each problem. em using any strategy or property
a. How many legs are there in 8 horses? The problem equation =	
Estimation	——— Actual product
b. Sami runs 15 minutes every day. How mo	any minutes does Sami run in 7 days ?
The problem equation = Estimation	——— Actual product —————
Challenge	
6 Sama had 8 bags, in each bag there were its shirt. How many total buttons were the The problem equation =	
Estimation	Actual product
	Place a smiley face

Lessons **64&65**

The relation between multiplication and division

Pre-study

Division

- To share things equally, you can divide.
- 12 sweets are divided among 3 children. How many sweets does each child get?

Separate 12 sweets into 3 equal groups.



Remember

Divide separate some things into equal groups.









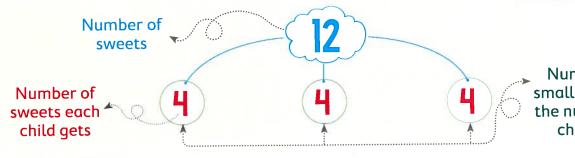
Hint

Use skip count by 3s to get 12. 3, 6, 9, 12 You skiped 4 times.

Each child gets 4 sweets.

The division sentence : $12 \div 3 = 4$

By representing the problem with part - part - whole model.

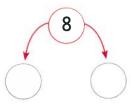


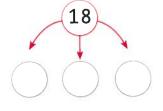
Number of small circles is the number of children

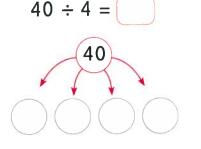
Check



Divide. Fill in the part-part-whole model.







Notes for parents

• Remind your child of the meaning of division.

Learn

The relation between multiplication and division

• The band played 5 songs during the halftime of the football game. Each song was 3 minutes long. How long did the band play?



 $\mathbf{\Xi}$ Equation : $\mathbf{5} \times \mathbf{3} = \mathbf{?}$



🧐 Think $: 5 \times 3 = 15$

- So, the band played for 15 minutes.
- The band played for 15 minutes at another football game. Each song was 3 minutes long. How many songs did the band play?



Remember

- Product the answer to a multiplication problem.
- Quotient the answer to a division problem.
- Fact family a set of related facts.
- Inverse operation operation that undo each other (addition - subtraction) & (multiplication division)

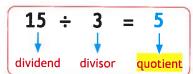


Equation: 15 ÷ 3 = ?



Think:

So,



So, the band played 5 songs.



- MATH IDEA Multiplication and division by the same number are opposite operations, or inverse operations. One operation undoes the other.
- A set of related multiplication and division equations using the same numbers is a fact family.

$$5 \times 3 = 15$$
 $15 \div 3 = 5$
 $3 \times 5 = 15$ $15 \div 5 = 3$ Fact family for 3, 5, 15

Ask your child to write the fact family of: 2, 3, 6 and 4, 7, 28.

Example 1

Fill in the missing numbers of the following. Complete the fact family for each.

a.
$$5 \times 8 = 40$$

$$\times$$
 5 = 40

$$--- \times 3 = 27$$

$$\div$$
 9 = 3

$$---\div 3 = 9$$

c.
$$6 \times - = 42$$

$$\div$$
 6 = 7

Solution 🗸

a.
$$5 \times 8 = 40$$

$$8 \times 5 = 40$$

$$40 \div 8 = 5$$

$$40 \div 5 = 8$$

b.
$$3 \times 9 = 27$$

$$9 \times 3 = 27$$

$$27 \div 9 = 3$$

$$27 \div 3 = 9$$

c.
$$6 \times 7 = 42$$

$$7 \times 6 = 42$$

$$42 \div 7 = 6$$

$$42 \div 6 = 7$$

Example 2

Complete.

a.
$$3 \times - - = 21$$

d.
$$35 \div 7 = ---$$

b.
$$\times$$
 4 = 24

e.
$$\div$$
 6 = 10

c.
$$18 \div 3 = ---$$

f.
$$56 \div - - = 8$$

Solution 🗸

a.
$$3 \times 7 = 21$$

c.
$$18 \div 3 =$$

d.
$$35 \div 7 = ---$$

e.
$$---- \div 6 = 10$$

f.
$$56 \div = 8$$

b.
$$6 \times 4 = 24$$

Think:
$$3 \times ? = 18$$
 So, $3 \times 6 = 18$, then $18 \div 3 = 6$

Think:
$$7 \times ? = 35$$
 So, $7 \times [5] = 35$, then $35 \div 7 = 5$

Think:
$$6 \times 10 = 60$$
 So, $|60| \div 6 = 10$

Think:
$$8 \times ? = 56$$
 So, $8 \times 7 = 56$, then $56 \div 7 = 8$

Check S

Complete.

a.
$$2 \times - - = 18$$

d.
$$---\div 9 = 6$$

b.
$$--- \times 8 = 24$$

e.
$$45 \div - - = 5$$

c.
$$40 \div 4 =$$

f.
$$36 \div - - = 6$$

• Ask your child to explain how can we use the relation between multiplication and division to solve multiplication and division problems.

Exercise

The relation between multiplication and division

On Lessons 64 & 65

1 Fill in the missing numbers of the following problems. Complete the fact family for each.

a. 5
$$\times$$
 4 = 20

$$=$$
 3 = 7

e.
$$\times$$
 6 = 24

2 Find the product of each of the following. Write the other multiplication equation.

a. 2
$$\times$$
 4 =

3 Find the quotient of each of the following. Write the other division equation.

= ____ f. 42
$$\div$$
 7 = ____

4 Complete the missing numbers in each of the following.

a. 5 \times ___ = 10

b. 7 × ___ = 28

c. 9 \times = 81

- 10 ÷ 5 =
- 28 ÷ 7 =____
- 81 ÷ 9 =

- **d.** 3 × = 18
- **e.** 6 × ___ = 42
- f. 10 × ____ = 80

- 18 ÷ ___ = 3
- 42 ÷ ____ = 6
- 80 ÷ ____ = 10

- **q.** = 14
- **h.** ____ × 3 = 3
- $i_{\bullet} \times 6 = 54$

- 14 ÷ 7 = ____
- 3 ÷ 3 =

7

= 49

54 ÷ 6 =

- j. ___ × 5 = 30
- _

X

L. ___ × 2 = 16

- 30 ÷ ____ = 5
- 49 ÷ ___ = 7
- 16 ÷ ____ = 2

5 Complete the missing numbers in each of the following.

k. ____

- a. 8 ÷ 2 = ____
- **b.** 40 ÷ 5 = ____
- **c.** 56 \div 7 = ____

- 2 × ___ = 8
- 5 × ____ = 40
- 7 × ___ = 56

- **d.** 27 \div = 3
- **e.** 16 \div = 4
- f. $72 \div = 8$

- $3 \times _{---} = 27$
- 4 × ___ = 16
- 8 × ____ = 72

- **g.** 36 ÷ 9 = ____
- **h.** 20 ÷ 2 = ____
- i. 18 ÷ ___ = 3

- 36 ÷ ___ = 9
- 20 ÷ ___ = 2
- 18 ÷ 3 =

j. \div 8 = 6

6

- k. ÷ 7
- l. ___ ÷ 6

- 8 ×
- = ____
- 7 × 5 =____

= 5

4 × 6 =

=4

6 Choose the correct answer.

a.
$$\div$$
 8 = 10

c.
$$63 \div - - = 9$$

d.
$$\div$$
 11 = 6

e.
$$15 \div 3 =$$

f.
$$--- \times 5 = 45$$

h.
$$\div$$
 7 = 3

Fill in the missing numbers, then draw lines to connect the equations that are related.

a.
$$\times 7 = 49$$

d.
$$\times 6 = 30$$

8 Solve the following problems using an efficient strategy for you.

	Problem	Work area	Answer
a.	56 ÷ = 8		
b.	× 3 = 24		
c.	28 ÷ 4 =	*	

9 Write the related equation and solve it.

	Problem	Work area	Answer
a.	Karim picked 60 oranges. He put them equally into 6 buckets. How many oranges were in each bucket? Equation:		
b.	Maria needs 8 handfull of nuts to make 1 batch of cookies. How many handfull of nuts will she need to make 4 batches of cookies? Equation:		
c.	There are 49 students going on a field trip to the pyramids. Each van can hold 7 students. How many vans are needed? Equation:		
d.	Bassem bought 3 bottles of milk. He paid 36 pounds. What is the price of one bottle of milk? Equation:		
e.	There are 28 pupils in the class. The teacher wanted to distribute them into 4 groups. How many pupils are in each group? Equation:		

Problem	Work area	Answer
f. Ahmed bought 3 books of 15 pounds for each.How much money did Ahmed pay?Equation:		
g. There are 2 tables, each with 3 tanks with 5 fish in each tank.		
How many fish are there in all ?		
Equation:		

Challenge

10 Pick one of the following problems and write a story problem using those numbers, then solve it.

$$2 \times 5 \times 7 =$$

Place a smiley face

Application on multiplication and division (Perimeter)

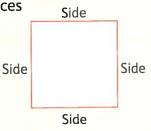
Learn 1 Finding the perimeter

Remember: Perimeter is a liner measurement of the distance around the shape.

Square

It has:

- 4 equal sides in length
- 4 vertices



Perimeter = side + side + side + side

= $4\times$ side

Rectangle

It has:

- 4 sides "2 short parallel with the same length
 - 2 long parallel with the same length"
- 4 vertices Length Width Width Length

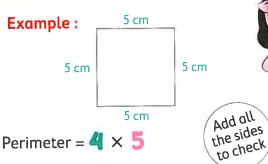
Perimeter = length + width + length + width

 $= 2 \times length + 2 \times width$

6 cm

6 cm

= $2 \times (length + width)$



= **20** cm



Perimeter = $2 \times (6 + 4)$

 $= 2 \times 10 = 20$ cm

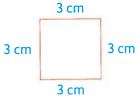


4 cm

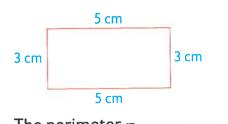
Check



Find the perimeter in each of the following.



The perimeter =



The perimeter =

Notes for parents

· Remind your child with the properties of each of square and rectangle to be able to calculate their perimeters.

Learn 2 Finding the unknown length given the perimeter

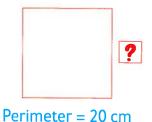
Example 1

Find the side length of the square which its perimeter is 20 cm.

Solution V

Where perimeter = 20 cm

Think:
$$20 \div 4 = 5$$



Example 2

Find the length of the rectangle which its width is 2 cm, and its perimeter is 12 cm.

Solution V



Where perimeter = 12 cm

$$2 \times (length + width) = 12$$

Then, length + width = 6





Think:
$$6 - 2 = 4$$

Then, the length = 4 cm

?



2 cm

Perimeter = 12 cm

Check



Use the information in each of the following to find the unknown side.

Perimeter = ____cm

The side length = ____ cm

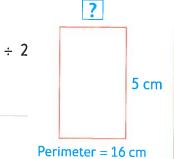
?

Perimeter = 24 cm

Perimeter = ____ cm length + width = $\div 2$

width = = =

The width = ____ cm



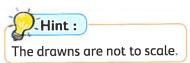
[·] Help your child to use multiplication and division to find the unknown length or width in each problem.

Exercise

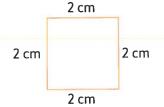
Application on multiplication and division (Perimeter)

On Lesson 66

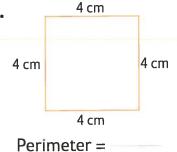




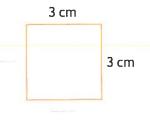
a.



b.

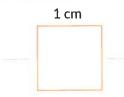


C.



Perimeter =

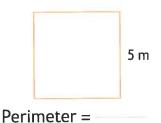
d.



e.



f.



Perimeter =

Perimeter =









i.



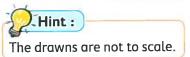
Perimeter =

Perimeter =

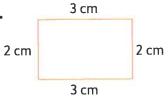
Perimeter =

Perimeter =

2 Find the perimeter of each rectangle.



a.

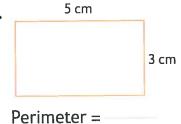


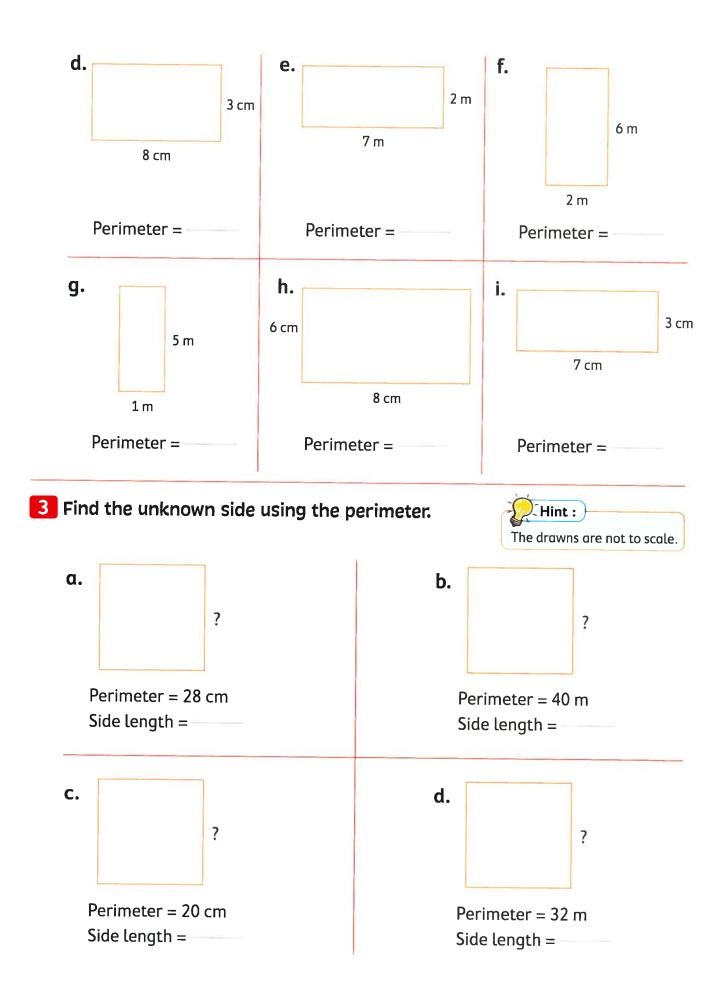
Perimeter =

b.



C.



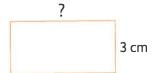


e.

6 m	
	?

Perimeter = 18 cm width =

f.



Perimeter = 24 cm length =

q.



Perimeter = 20 km

width =

h.



Perimeter = 22 mlength =

i.



Perimeter = 36 km Side length =

j.



Perimeter = 20 cm length =

4 Choose the correct answer.

a. The perimeter of the square whose side length is 6 cm =

cm



12

24

36

You may need to draw square

- **b.** The perimeter of the square whose side length is 5 m =m
 - 10

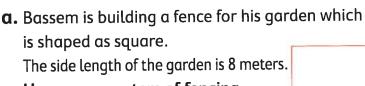
- 20
- 50
- 100
- **c.** The side length of the square whose perimeter is 12 cm = 10 cm
 - 10

- 8
- 4
- 3
- **d.** The side length of the square whose perimeter is 32 units =
 - 16

- 8
- 4
- 12

e	The perimeter of the	rectangle w	hose length is 5 cn	n and width is 3 cm e	qual	S
	8	<u> </u>	<u> </u>	() 20 (noed t	may to drav	V
f.	The perimeter of the requals ————————————————————————————————————	ectangle who	se length is 9 cm ar	nd width is 7 cm		6
	<u>2</u>	<u> </u>	63	32		
g.	The length of the red	ctangle whose	e width is 2 cm and	d perimeter is 10 cm	equo	ılş
	8	<u>6</u>	<u> </u>	<u> </u>		
h.	The width of the recto	angle whose le	ength is 5 cm and p	erimeter is 16 cm		
	9	<u>3</u>	8	<u> </u>		
i.	The length of the recta	ngle whose wi	dth is 4 m and perir	meter is 22 m equals –		m
	<u> </u>	<u> </u>	7	9		
5				incorrect statemen	t.	
	a. The perimeter of	square of side	e length 7 cm is 24	cm	()
	b. The perimeter of	rectangle of l	ength 8 cm and wid	dth 3 cm is 22 cm	()
	c. The perimeter of	rectangle of l	ength 6 m and widt	th 5 m is 30 m	()
	d. The side length o	f square of pe	rimeter 24 cm is 4 o	cm	()
	e. The length of the r	ectangle whos	se width is 5 m and p	erimeter 30 m is 10 m	()
	f. The width of the re	ectangle whose	e length 8 cm and p	erimeter 24 cm is 4 cm	()
	g. The perimeter of	square = side	length × 4		()
	h. The perimeter of	rectangle = (l	+ w) × 4		()

6 Read each story. Solve the problem.



How many meters of fencing will Bassem need?

Calculate the area of the garden.

8 m

b. Sandy built a fence for her garden which shaped like a square. She used 28 meters.

What is the side length for Sandy's garden?

Calculate the area of the garden.

Perimeter = 28 m

C. Hani is building a fence for his garden which is shaped like a rectangle.
 The length of the garden is 5 meters and the width 2 m

of the garden is 2 meters.

How many meters of fencing will Hani need?

d. Karma built a fence for her rectangular garden. If she used 48 meters of fencing

and want her garden to be 18 meters long.

How wide can she make her garden?

18 m

Perimeter = 48 m

place a smiley

Challenge

7 Calculate the side length of a square which its area is 49 square cm.





Multistep problems

Learn

How do you solve multistep problems?

- Multistep problem is a problem that involve more than one operation.
- Some word problems have hidden question or questions that must be answered before you can solve the problem.

You have to determine what operation to use and what strategies will you use to help you figure out how to solve the problem.

Example 1

Dina bought 3 packs of crayons. Each pack contains 12 crayons. If she gave her friend 6 crayons of them.

How many crayons are left?

First Way

Using multiplication and subtraction operations

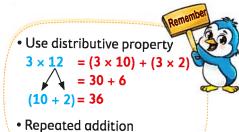
⇒ Find the hidden question:

How many crayons did Dina buy?

- 🌂 Dina bought 🔏 crayons in all.
- **⊃** Solve the problem:

How many crayons are left?

Name 1 The left crayons are 30 crayons.



3 × 12 = 12 + 12 + 12 = 36

Short way to solve

 $(3 \times 12) - 6 = 36 - 6 = 30$

Notes for parents

 Let your child discover and solve the hidden question and ask him/her if he/she could solve the problem using the short way.

Another Way

Using addition and subtraction operations

Dina bought 3 packs of 12 crayons

$$12 + 12 + 12 = 36$$

She gave 6 to her friend

$$36 - 6 = 30$$

The left crayons are **30** crayons.

Short way to solve

$$(12 + 12 + 12) - 6$$

= $36 - 6 = 30$

Example 2

Mr. Samir distributed 28 sheets of paper equally among 7 children in the first time.

If he gave 2 more sheets for each child.

How many sheets did each child get in all?



Short way to solve

 $(28 \div 7) + 2 = 4 + 2 = 6$

Answer

Using division and addition operations.

Find the hidden question:

How many sheets did each child get in the first time?

- Each child got 4 sheets in the first time.
- Solve the problem:

How many sheets did each child get in all?



🌯 Each child got 🌀 sheets in all.

Notes for parents

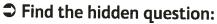
• Tell your child that multistep problem needs to know what information do you have to help you solve the problem.

Example 3

Sara had 29 L.E. If she saved 15 L.E. and distributed the rest equally between her two sisters.

How much money will each sister have?





How much money are left after Sara saved 15 L.E. of them?

- 🥄 Sara distributed 🎮 L.E. between her two sisters.
- Solve the problem:

How much money will each sister have?

14 L.E.
$$\stackrel{\circ}{\approx}$$
 2 = 7 L.E. sisters

Each sister will have 7 L.E.

Example 4

Bassem bought 5 pencils for 3 pounds each and 6 pens for 4 pounds.

How much money did Bassem pay for all?



Short way to solve

 $(29 - 15) \div 2$ = $14 \div 2$

= 7

Answer Using multiplication and addition operations

⇒ Find the hidden questions:

What is the price of 5 pencils?

There are 2 hidden questions in this word problem.



🌂 The price of 5 pencils is 🎏 pounds.

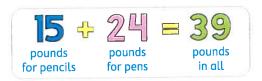
[•] Let your child guess the other hidden question in example 4.

What is the price of 6 pens?



- The price of 6 pens is 24 pounds.
- **○** Solve the problem:

How much money did Bassem pay for all?



🍳 Bassem paid 39 pounds in all.



Short way to solve

$$(5 \times 3) + (6 \times 4)$$

= 15 + 24
= 39

Check 🔑

Write and answer the hidden question. Then solve the problem.

Youssef has a box containing 24 balls. The box includes an equal number of red, green and yellow balls. He gave all red balls to his friends.

How many green and yellow balls are left?

Find the hidden question

⇒ Solve the problem

Notes for parents

Help your child write the hidden question and solve the problem.

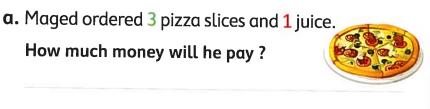
Exercise

5

Multistep problems

On Lessons 67 to 70

1 For the following problems, use the price list. Think and answer the hidden question. Then solve the problem.





b. Amira ordered 2 hamburgers and 1 cake.

How much money will she pay?



c. Laila ordered 3 juice and 3 cakes.

How much money will she pay?



d. Hossam bought 3 hamburgers and paid 20 pounds.
How much change will he get back?



Hisham had 4 bags of marbles. Each bag contained 9 marbles. He also had 18 marbles that were not in a bag.

How many marbles did Hisham have in all?



3 Yousra had 17 meters of cloth. She made 3 dresses of the same size and 8 meters of cloths were left.

How many meters of cloth did each dress take?



4 Adam saved 20 L.E. per week for 4 weeks. In the fifth week, he only saved 10 L.E.

How much money did Adam save in 5 weeks?



5 Amin buys 15 seeds. He needs to distribute them in 7 pots to plant 4 seeds in each pot.

How many more seeds Amin will need?



6 Each day for a week, Salma eats 7 crackers for a snack. The next week she ate 60 crackers.

How many more crackers did Salma eat in the next week than the first week?



7 Mr. Yassin had 52 pieces of fruit. He took 4 pieces for him and distributed the rest equally among 8 children.

How many pieces of fruit does each child get?



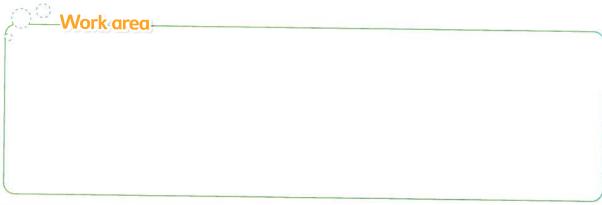
- 8 Read and solve each problem. Show your work.
 - a. A farm has 350 animals. There are 195 cows. The rest of animals are sheep.

How many more cows are there than sheep?



b. There are 30 young puppies and 26 adult puppies. The puppies are placed equally into 7 areas.

How many puppies are in each area?



PREAD the story problems and the students' solutions.

Figure out what the student did wrong and then correctly solve the problem. Be sure to show your work as the example.

Example

• Amina's family went on a three-days road trip. On the first day, they drove 240 kilometers. On the second day, they drove 123 kilometers. On the third day, they drove 215 kilometers. Last year on their road trip, they drove a total of 428 kilometers.

How many more kilometers did they drive on this trip?

Amina's family drove 240 km, 123 km, and 215 km on this road trip. I added those numbers together and then added to the 428 km they drove on his last three-days road trip. Amina's family drove 1,006 km in all.



What did the student do wrong ?	Correctly solve the problem and show your thinking.	
The wrong step is adding the total to 428 km.	240 + 123 + 215 = 578 km Amina's family drove 578 km for three days. 578 - 428 = 150 km	
	Amina's family drove 150 km more than the last year road trip.	

a. Rami had 5 bags of candy. Each bag contained 6 pieces of candy.
 He also had 13 pieces of candy that were not in a bag.

How much candies did Rami have in all?

 \pmb{Rami} had 17 pieces of candy in all. First, I figured out what he had in the bags, and then I took away what he had that was not in the bag.



What did the student do wrong? Why do you think the student made this error?	Correctly solve the problem and show your thinking.

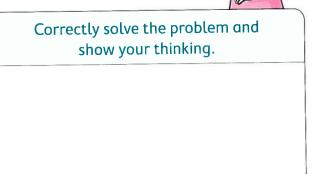
b. Mrs. Suzan baked **54** chocolate chip cookies. She divided the cookies equally into **6** containers. Then, she baked more cookies so that she could put **6** more cookies in each container.

How many cookies are in each container?

What did the student do wrong? Why do

you think the student made this error?

There are 10 cookies in each container (9 cookies from the first batch she made and 1 cookie from the second batch she made).



c. Osama earned money for completing extra chores. He earned 10 L.E. per hour cleaning the bedrooms. He worked for 4 hours. He also earned an extra 25 L.E. for vacuuming the entire house.
How much money did Osama earn?

Osama earned 35 L.E. by completing the chores. He earned 10 L.E. cleaning the bedrooms and then 25 L.E. for vacuuming.

What did the student do wrong? Why do you think the student made this error?	Correctly solve the problem and show your thinking.

~			
(-O-)	Chal		
YY	Chal	lend	Je -
		1011	7





Assessment Chapter 1

1 Choose.

a.
$$(2 \times 5) \times 6 =$$

$$(3 \times 6 \text{ or } 10 \times 6 \text{ or } 7 \times 6 \text{ or } 25 \times 6)$$

b.
$$(2 \times 3) \times$$
 = 48

c.
$$\div 4 = 7$$

d.
$$\times 7 = 56$$

f. The perimeter of square = side length
$$\times$$

2 Put (\checkmark) to the correct statement or (X) to the incorrect statement.

a.
$$5 \times 7 = (5 \times 4) + (5 \times 5)$$

,	١.
()

c. If
$$36 \div 9 = 4$$
, then $9 \times 4 = 36$

)

f.
$$3 \times 4 \times 5 = 7 \times 5$$

)

4 Bassem bought 8 pens. He gave the seller 50 pounds and the seller gave him back 10 pounds as the rest.

What is the price of each pen?



Mariam buys 21 toys. She has 4 boxes.

She wants to put 3 toys in each box.

How many more boxes does Mariam need?



Paula bought 3 pizza slices of 9 pounds each.

He paid 30 pounds.

How much is the rest?

