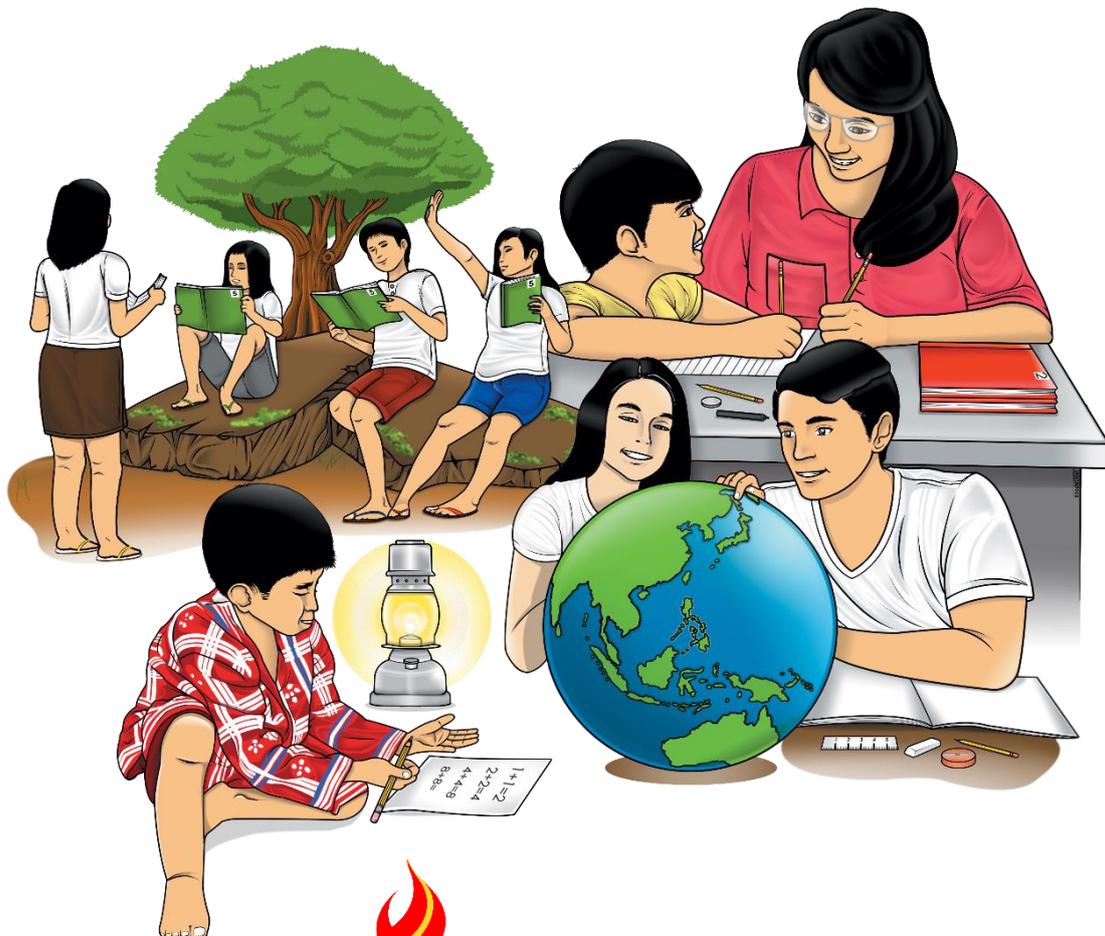


Mathematics

Quarter 2 – Module 10:

Solving Problems Involving Multiplication



Mathematics – Grade 5
Alternative Delivery Mode
Quarter 2 – Module 10: Solving Problems Involving Multiplication
First Edition, 2020

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Published by the Department of Education
Secretary: Leonor Magtolis Briones
Undersecretary: Diosdado M. San Antonio

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Printed in the Philippines by

Department of Education – Region VIII

Office Address: DepEd Regional Office No. 8
Candahug, Palo, Leyte

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Mathematics

Quarter 2 – Module 10: Solving Problems Involving Multiplication

Introductory Message

This Self-Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests, and read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Good luck and happy learning!



What I Need to Know

Hello mathletes!

In this module, you are going to gain an understanding on solving routine and non-routine problems involving multiplication. In solving word problems, you need to understand the problem very well, devise a plan to solve it, show solution with confidence, and review the correctness of your answer.

After going through this module, you are expected to solve routine and non-routine problems involving multiplication without or with addition or subtraction of decimals and whole numbers including money using appropriate problem-solving strategies and tools.



What I Know

Directions: Write the letter and solutions if necessary of the correct answer on a separate sheet of paper.

- 1) What are the 4 steps in solving word problems?
 - A. Plan, Understand, Analyze, Solve
 - B. Know, Understand, Analyze, Solve
 - C. Understand, Plan, Solve, Check, and Look Back
 - D. Understand, Analyze, Solve, Check, and Look Back

- 2) Father and other farmers harvested tomatoes for the town's *Tiangge* Day. They were able to fill 56.5 *kaings* each weighing 18.75 kilograms. About how many kilograms of tomatoes were harvested for the *Tiangge* Day?
 - A. 1045 kg
 - B. 1048 kg
 - C. 1060 kg
 - D. 1083kg

- 3) Ivan runs 4.8 km every morning. How many kilometers does he run each week?
 - A. 30.2 km
 - B. 32.5 km
 - C. 33.6 km
 - D. 35.3 km

- 4) Alvin bought 3 Wattpad pocketbooks at Php65 each and 2 sports magazines at Php85 for his friends. How much change did he get from his 500-peso bill? What operations are we going to use to solve the problem?
- addition, subtraction, multiplication
 - division, multiplication, addition
 - addition and multiplication
 - multiplication only
- 5) What is the answer to the problem in item no. 4?
- Php125.00
 - Php135.00
 - Php145.00
 - Php365.00
- 6) Paciano would harvest 45 *buko* every day. How many *buko* would have he harvested after 2 weeks? How will you write the problem in a mathematical sentence?
- 45 *buko* x 2days = N
 - 45 *buko* x 7days = N
 - 45 *buko* x 12days = N
 - 45 *buko* x 14days = N
- 7) In item no. 6, how many pieces *buko* did Paciano harvest in 2 weeks?
- 90
 - 315
 - 540
 - 630
- 8) Mary Jane reads 3 pocketbooks every week. How many pocketbooks did she read after a month?
- 7 pocketbooks
 - 12 pocketbooks
 - 16 pocketbooks
 - 30 pocketbooks
- 9) Modesta bought 3 boxes of eggs. Each box has three dozen eggs inside. How many eggs did Modesta buy altogether?
- 39 eggs
 - 72 eggs
 - 108 eggs
 - 324 eggs
- 10) Mutya has six friends who all have three toy dolls, and then two friends who only have two dolls. How many dolls do Mutya's friends have in all?
- 16 dolls
 - 17 dolls
 - 18 dolls
 - 22 dolls



What's In

To understand and solve routine and non-routine problems involving multiplication, you need first to review your skills in rewriting mathematical phrases to mathematical expressions.

Activity 1: Translate Me

Directions: Read and analyze the situations. Then write the following mathematical phrases into mathematical expressions or number sentences. Use your Math Activity notebook to answer this activity.

- 1) Five children are playing marbles. They all bought 8 marbles. How many marbles do they have in all?
- 2) The Erandio family has three members. Each member has sports shoes and formal shoes. How many shoes does the Erandio family have in all?
- 3) Princess orders five pizzas for her visitors. Each pizza is sliced into six parts. How many slices of pizza will there be?
- 4) A barangay has three *tanod* outposts. In each outpost, there are five assigned *tanods*. How many *tanods* does the barangay have?
- 5) Richard usually eats three meals a day. How many meals does he have in a week?



What's New

Read and analyze the word problem below.

A shoe store sells different kinds of shoes. One day, it sold 30 pairs of sneakers at Php249.75 a pair. How much was the total sales for the sneakers? Study the presentation below.



What Is It

To solve for the word problem above, we follow the 4 steps.

Understand.

- a. What is asked?
 - The amount of sales the shoe store had for the day
- b. What are the given facts?
 - 30 pairs of sneakers sold at P249.75 a pair

Plan.

Strategy: Use multiplication to find the total amount of the 30 pairs of sneakers that were sold.

Number sentence: $\text{Php } 249.75 \times 30 = N$

Solve.

Align first the numbers to be multiplied. Then count the number of decimal places in the factors. Place the decimal point in the product as determined by the number of decimal places in the factors.

$$\begin{array}{r} \text{Php } 249.75 \\ \times \quad 30 \\ \hline \quad 000 \ 00 \\ + \ 74925 \\ \hline \text{Php } 7492.50 \end{array}$$

Answer: The total sale for the sneakers sold was Php 7, 492.50.

Check and look back.

There are ways to check the solution to this problem. One way is by estimation.

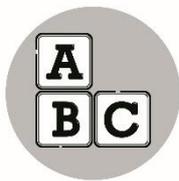
Php249.75 rounds to Php250

30 rounds to 30

Php250 x 30 = Php7,500

Php7,492.50 rounds to Php7,500

Now, proceed to the next activity to practice solving problems below.



What's More

Guided Activity:

Directions: Read and analyze, then solve the word problem below.

Biboy had Php 500. He went to a bookstore and bought 3 notebooks at Php 27.50 each and a dictionary that costs Php 285.25. How much money was left of him?

What is asked?

The amount of money left of Biboy.

What are given?

His money was Php500, he bought 3 notebooks at Php27.50 each and a dictionary that costs Php285.25

What will be the operation to be used?

Multiplication, Addition and Subtraction

What is the number sentence?

[Php500 – (3 x P27.50) + Php285.25] = N

| | | | |
|-----------|--|---|--|
| Solution: | $\begin{array}{r} \text{Php}27.50 \\ \times \quad 3 \\ \hline \text{Php}82.50 \end{array}$ | $\begin{array}{r} \text{Php}285.25 \\ + \text{Php } 82.50 \\ \hline \text{Php}367.75 \end{array}$ | $\begin{array}{r} \text{Php}500.00 \\ - \text{Php}367.75 \\ \hline \text{Php } 132.25 \end{array}$ |
|-----------|--|---|--|

Answer: The amount of money left of Biboy was **Php132.25**.

Activity: Practice Makes Perfect

Directions: Read and analyze, then solve the following word problems. Answer this using your Math Activity notebook.

- 1) Faith bought 2 notebooks at Php 48.50 each and a pad paper at Php 30.75. If her money was a 200-peso bill, how much was her change?
- 2) Pepito bought 2 t-shirts at Php149.95 each and a pair of pants for Php 675.95. How much change did he get from his 1,000-peso bill?
- 3) Mrs. Eliza makes blouses and skirts. She has 1.25m for the blouse and 1.35m for the skirt. How much will 12 blouses and skirts cost if a meter of the material used would cost Php 45.25?
- 4) Angel was asked by her mother to buy 2 kilograms of rice and a can of sardines at a nearby sari-sari store. If a can of sardines costs Php15.00 and the rice costs Php 45.00 per kilogram, how much was her change if her mother gave her Php120.00?
- 5) Grace prepared sandwiches for the seminar participants. She bought 5 loaves of bread at PHP22.50 each, 2 bottles of mayonnaise at PHP55.50 a bottle, and 1.5 kilograms of ham at Php 240 a kilogram. If she gave the cashier P1000, how much change did she receive?



What I Have Learned

Directions: Fill in the gaps to complete the statements. For Numbers 5 to 10, the first letters of the answers are given as clues.

After studying this module, you have learned about the 4 steps in solving word problems, and these are: _____, _____, _____, and _____. (1-4)

In the first step, you are going to:

- Know what is being **a**_____ in the problem (5) and
- What are **g**_____ in the problem. (6)

In the second step, you are going to:

- Know what will be the **o**_____ to be used (7) and
- Write the **n**_____ . (8)

In the third step, you are going to:

- Solve and show your **s**_____ . (9)

In the last step, you are going to check and **l**_____ . (10)



What I Can Do

Directions: Read, analyze, and solve for the answer. Use your Math Activity notebook to answer this activity.

- 1) Christian has three friends who all have five toy cars, and then two friends who only have three cars. How many toy cars do Christian's friends have?
- 2) Lea bought 8 boxes of chocolate bars. Each box has 12 chocolate bars. How many chocolate bars did Lea buy altogether?
- 3) Madel gave Php20 *baon* to her three children. If she has Php100 in her pocket, how much was left of her after giving the *baon*?
- 4) Mother bought 3 kilograms of sugar at Php 23.70 per kilogram and 2 kilograms of NFA rice at Php 21.50 per kilogram. How much change did she receive from her 500-peso bill?
- 5) Asyong's allowance is Php500 a week. He spends Php80 for transportation and Php225 for meals and snacks. How much money can he save in 4 weeks?



Assessment

Directions: Read and analyze. Solve the following word problems on one whole sheet of paper.

- 1) Barangay Maligaya is 28.5 km from the town proper. In going there, Paciano traveled 15.75 km by jeepney and 3.5 km by tricycle and the rest by walking. How many kilometers did he travel by walking if he travelled to the town proper 4 times a week?
A. 30km B. 35km C. 37km D. 40km
- 2) The Calamdag family went to a carnival. They bought 2 tickets for adults at Php80.00 each and 3 tickets for children at Php60.00 each. How much change did they receive from the Php500 given to the ticket booth clerk?
A. Php160.00 B. Php170.00 C. Php180.00 D. Php190.00
- 3) For Xyra's birthday, Mother bought a cake at Php200, 4 gallons of ice cream at Php350 each, and cookies worth Php225. She brought with her two Php1000 bills. How much was left of her money?
A. Php150.00 B. Php160.00 C. Php175.00 D. Php180.00
- 4) If there are four horses and three people. How many feet are there in all?
A. 19ft B. 20ft C. 22ft D. 25ft
- 5) A small red box contains two marbles and a small blue box contains 1 marble. Jotty gets ten red boxes and one blue box of marbles respectively. How many marbles did Jotty get in all?
A. 15 B. 18 C. 20 D. 21
- 6) Yen jogs 2.53 kilometers every day. About how many kilometers does she jog in one week?
A. 17.71kms B. 18.9kms C. 71.71kms D. 81.9kms
- 7) A piece of tile is 30.5 cm long and 28.5 cm wide. What area can 20 tiles cover?
A. 16,173 cm² B. 17,385 cm² C. 17,538 cm² D. 17,835 cm²
- 8) Michael bought 3.50 kilograms of chicken hotdog at Php80.00 per kilogram. How much will he pay the cashier?
A. Php180 B. Php200 C. Php280.00 D. Php300.00
- 9) Sheila works as a saleslady at a department store. She works for 6 hours a day and receives Php70.50 per hour. How much will she receive in one week?
A. Php1961.00 B. Php2000.00 C. Php2500.00 D. Php2,961.00
- 10) Rina receives Php50.00 a day for her school allowance. She spends Php16.00 for her transportation, Php20.00 for her snacks, and saves the rest. How much will she save during the weekdays?
A. Php70.00 B. Php80.00 C. Php90.00 D. Php100.00



Additional Activities

Solve the problems based on the situation below.

Dexter and his 3 friends went to the cafeteria. The menu gave them three options:

Option 1: spaghetti, sandwich, and orange juice

Option 2: pizza and lemon juice

Option 3: one-piece fried chicken, rice, and iced tea

Use the menu to know the cost of each option.

- 1) Which option is the most expensive?
Which is the cheapest?
- 2) About how much will they spend for their food if they all decided to order option 1?
- 3) About how much will they spend for their food if they all decided to order option 2?
- 4) About how much will they spend for their food if they all decided to order option 3?

| Menu | |
|---------------------|-----------|
| Pizza | Php 75.00 |
| Spaghetti | Php 25.00 |
| Sandwich | Php 12.00 |
| Fried chicken | Php 35.00 |
| Rice | Php 10.00 |
| Orange juice | Php 15.00 |
| Lemon Juice | Php 15.00 |
| Iced tea | Php 18.00 |



Answer Key

Additional Activities

1) Option 1: Php 52.00
 Option 2: Php 90.00
 Option 3: Php 63.00
 Most Expensive – Option 2
 Cheapest – Option 1
 3) Php 208.00
 4) Php 360.00
 5) Php 252.00

Assessment

1) C
 2) A
 3) C
 4) C
 5) D
 6) A
 7) B
 8) C
 9) D
 10) A

What I Can Do

1) 21 cars
 2) 96 chocolate bars
 3) Php 40.00
 4) Php 385.90
 5) Php 780.00

What I have Learned

4 steps: (1-4)
 -understand
 -plan
 -solve
 -check
 1st step: a-asked (5)
 2nd step: o-operation (7)
 n-number sentence
 3rd step: s-solution (9)
 last step: look back (10)

What's More

Activity: Practice Makes Perfect

1) Php 72.25
 2) Php 24.15
 3) Php 1,411.80
 4) Php 15.00
 5) Php 416.50

What's In

1) $N = 5 \times 8$ marbles
 2) $N = 3 \times 2$ pair of shoes
 3) $N = 5 \times 6$ slices
 4) $N = 3 \times 5$ barangay tandods
 5) $N = 7 \times 3$ meals

What I Know

1) B
 2) C
 3) C
 4) A
 5) B
 6) D
 7) D
 8) B
 9) C
 10) D

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