3

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Mathematics

Quarter 2 – Module 14:

Solving Routine and Non-Routine Problems Involving Division

ALTERNATIVE DELIVERY MODE
ADM

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Alternative Delivery Mode
Quarter 2 – Module 14: Solving Routine and Non-Routine Problems Involving Division
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3

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Quarter 2 – Module 14:

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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.

Thank you.

What I Need to Know

This module was designed and written with you in mind. It is here to help you comprehend problem-solving. The scope of this module permits it to be used in many different learning situations.The language used recognizes the diverse vocabulary level of students. The lessons are arranged to follow the standard sequence of the course. But the order in which you read them can be changed to correspond with the textbook you are now using.

After going through this module, you are expected to:

- solve routine and non-routine problems involving division of2- to 4-digit numbers by1- to 2-digit numbers without or with any of the other operations of the whole numbers includingmoney using appropriate problem-solving strategies and tools.

Enjoy your journey. Good luck!

What I Know

Read, analyze, and solve each problem. Choose the letter of the correct answer and write it in a separate sheet of paper.

Mother and Father bought 12 pairs of socks for ₱600.00. If they gave equally to their six children, how many pairs of socks each child have?

1. What is asked in the problem?
   a. The number of socks worth ₱600.00
   b. The amount of 12 pairs of socks
   c. The number of pairs of socks each child have
   d. The amount of 2 pairs of socks each child receives
2. What is the correct answer?
   a. 3 pairs
   b. 2 pairs
   c. ₱100.00
   d. ₱200.00

Mrs. Reyes withdrew ₱3 000 from the bank. She bought a bag and shoes worth ₱1 250 and the remaining amount would be given equally among her 2 brothers for their Christmas gift. How much would each brother receive?

3. What is the number sentence?
   a. (₱3 000 – ₱1 250) ÷ 2 = N
   b. (₱3 000 + ₱1 250) – 2 = N
   c. (₱3 000 ÷ 2) – ₱1 250 = N
   d. (₱3 000 – ₱1 250) x 2 = N
4. State the complete answer.
   a. Each child received ₱1 750
   b. Each child received ₱875
   c. Each child received ₱250
   d. Each child received ₱775
5. Ana saved ₱20 a day from her food allowance. After a month, she bought a new dress worth ₱350 from her savingsand she gave the rest equally to her 2 sisters. How much each of her sisters receive?
   a. ₱250 b. ₱150 c. ₱125 d. ₱175

Lesson 1 Solves Routine and Non-Routine Problems Involving Division of 2-to 4-Digit Numbers by 1-to 2-Digit Numbers

Problem Solving is the process of finding solutions to difficult or complex issues. Word problems can be classified as routine or non-routine. Routine problem solving involves using at least one ofthe four arithmetic operations and/or ratio to solve practical problems. A non-routine problem is any complex problem that requires some degree of creativity or originality to solve. Typically, it does not have an immediately apparent strategy for solving them. Oftentimes, these problems can be solved in multiple ways.

What's In

Recall the steps in answering word problems and solve theproblem below *mentally*.

Miss Reyes has 80 books in Mathematics. She wants to divide these books equally among 4 sections. How many books will each section receive?

What's New

In solving word problems, it does not only involve one operation. Sometimes, it requires two or more operations in order to solve acertain problem.

Activity 1

Read the problem and answer the questions that follows:

A farmer packed 96 kilos of chicken feeds into 12 kilo bags. If a bag of chicken feeds was sold for ₱400.00 each, how much did he earn?

1. What is being asked? _____
2. What are the hidden facts? _____
3. What are the operations to be used? _____
4. What is the number sentence?_____
5. What is the complete answer? _____

What is It

In solving a problem, let us analyze first the problem using thefollowing steps:

1. **Understand.** Solving problem requires understanding and analysis of the problem.
   What do you need to find out about the problem?What is being asked?
   Answer: The amount a farmer earned 96 kilos of chickenfeeds into 12-kilo bags
   What does the problem tell?
   Answer: A bag of chicken feeds was sold at ₱400.00 each

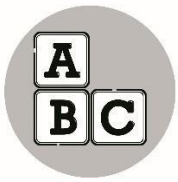
What are the hidden facts?
Answer: The number of 12-kilo bags packed

2. **Plan.** Knowing all the needed information and data, determining what operations to use.
   What operations to be used? *Answer: Division and Multiplication*What is the number sentence?
   Answer: (96÷12) x ₱400.00 = N

3. **Solve.** Perform the operations. Do the operation inside the parenthesis first.
   (96 ÷ 12) x ₱400.00 = N
   8 x ₱400 = P320.00

$$\begin{array}{r|l} & 8 \\ \hline 12 & 96 \\ & \underline{96} \\ & 0 \end{array} \qquad \begin{array}{l} \text{P400.00} \\ \times \quad 8 \\ \hline \text{P3 200.00} \end{array}$$

4. **Answer**. State the complete answer.
   A farmer earned ₱3 200.00



What's More

Activity 2

Read the problem below and answer the questions that follow:

Two friends save ₱450.00. They are planning to buy gifts for their 2 friends this coming Christmas Day. How much is the cost of each gift they can buy from their savings?

1. What is asked in the problem? _____
2. What are the given facts? _____
3. What operation to be used? _____
4. What is the number sentence? _____
5. State the complete answer._____

Activity 3

Read each problem below. Give the number sentence and state the complete answer.

1. Five friends ate their lunch at Jollibee. The meal cost ₱550. They agreed to share equally the expenses. What was the share of each girl?

   Number sentence: _____

   Answer: _____

2. Jessica and her brother is at the mall. They buy a dress for ₱450.00 and a pair of shoes for ₱500.00. Lastly, she gets her brother a necklace for ₱350.00. They agreed to divide equally the amount to be paid to the seller. How much eachof them will share?

   Number sentence: _____

   Answer: _____

What I Have Learned

In solving a problem, analyze first the problem using the followingsteps:

1. **Understand.** Solving problems requires understanding and analysis of the problem.
   What do you need to find out about the problem?What is being asked?
   What does the problem tell?
   What are the hidden facts/questions?

2. **Plan.** Knowing all the needed information and data, determining what operations to use.
   What is the number sentence?

3. **Solve.** Perform the operations.

4. **Answer.** State the complete answer.

What I Can Do

Activity 4

Solve the problem and state the complete answer.

John received ₱5 500 for her birthday. He gave ₱1 000 to his grandmother. He wants to split the remaining money into groups to buy (three things): dress, bag, and make-up. If he wants the same amount for each item, how much money willhe put into each?

Assessment

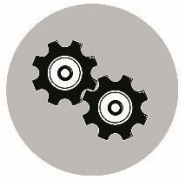
Read, analyze, and solve each problem. Choose the letter of the correct answer and write it in a separate sheet of paper.

Father budgeted ₱4 500.00 to buy 3 pairs of shoes for his three children. How much is the amount of shoes for each child?

1. What is asked in the problem?
   a. The number of shoes worth ₱4 500.00
   b. The amount of 3 pairs of shoes
   c. The number of pairs of shoes each child have
   d. The amount of shoes for each child
2. What is the correct answer
   a. ₱4 500.00
   b. ₱500.00
   c. ₱2 500.00
   d. ₱1 500.00

Mrs. Ramirez withdrew ₱5 500 from the bank. She bought grocery items worth ₱2 500 and the remaining amount would be given equally among her 2 brothers. How much would each sister receive?

3. What is the number sentence?
   a. (₱5 500 + ₱2 500) – 2 = N
   b. (₱5 500 – ₱2 500) ÷ 2 = N
   c. (₱5 500 ÷ 2) – ₱ 2 500 = N
   d. (₱5 500 – ₱ 2 500) x 2 = N
4. State the complete answer.
   a. Each brother received ₱1 250
   b. Each brother received ₱1 500
   c. Each brother received ₱500
   d. Each brother received ₱750
5. Erica saved ₱30 a day from her allowance. After 2 weeks, she bought a cellphone case worth ₱250 from her savingsand she gave the rest to her 2 brothers equally. How mucheach of her brother receive?
   a. ₱75
   b. ₱90
   c. ₱85
   d. ₱95



Additional Activities

Activity 5

Solve the problem below. Show your solution.

A farmer packed 80 kilos of sugar into10-kilo bags. A bag of sugar was sold for ₱35 each. If they paid their helper ₱100, how much did they earn?

Solution:

Answer Key

What I Know	What's In	What's More
1. C 2. b 3. a 4. b 5. c	Each section will receive 20 books **What's New** **(Activity 1)** 1. The amount he/she earned for the chicken feeds he/she sold 2. The number of 12-kilo bags packed 3. Division, Multiplication 4. (96÷12) x ₱ 400 = N 5. He earned ₱ 3 200	**(Activity 2)** 1. The cost of each gift they bought from their savings 2. ₱450.00 savings. 2 friends 3. Division 4. ₱450.00 ÷ 2 = N 5. The cost of each gift is ₱225 **(Activity 3)** 1. ₱550 ÷ 5 = N ₱ 110.00 share for each 2. (₱450 + ₱500 + ₱350) ÷ 2= N They shared ₱650 each
What I Can Do **(Activity 4)** He put ₱1 500 into each item	**Assessment** 1. d 2. d 3. b 4. b 5. c	**Additional Activity** {(80 ÷ 10 x 35) – ₱100} = N {8 x 35 – ₱100} 280 – ₱100 ₱180 He earned ₱180.

References

Curriculum Guide: M3NS-Iij-57.2 page 67.

Lesson Guide in Elem Math Grade 3. 2012, pp 281-293

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