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DepED
DEPARTMENT OF EDUCATION

Lesson Exemplar for Mathematics

Quarter 2
Lesson
4

Lesson Exemplar for Mathematics Grade 4
Quarter 2: Lesson 4 (Week 4)
SY 2024-2025

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MATHEMATICS / QUARTER 2 / GRADE 4

I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES	
A. Content Standards	The learners should have knowledge and understanding of multiplication of whole numbers with products up to 1 000 000, division of up to 4-digit numbers by up to 2-digit numbers, and the MDAS rules.
B. Performance Standards	By the end of the quarter, the learners are able to perform different operations by applying the MDAS rules. (NA)
C. Learning Competencies and Objectives	1. Perform two or more different operations by applying the MDAS rules. 2. Represent situations involving one or more of the four operations using a number sentence.
D. Content	Order of Operations (Applying the MDAS rules)
E. Integration	

II. LEARNING RESOURCES
Tabilang, A. R., Arce, I. J. B., Pascua, R. V., Calayag, N. P., Dacuba, L. P., Borais, D. B., Buemia, r. B., Collao, M. T., Morandate, L. g., Danao, A. B., Gonzaga, L. N., Briones, I. A., & Daganta, J. A. D. (2015). Mathematics 4 Learner's Material Unit 1. pp. 82-84. Department of Education. Philippines.

III. TEACHING AND LEARNING PROCEDURE		**NOTES TO TEACHERS**
A. Activating Prior Knowledge	**DAY 1 to 4** **1. Short Review** **Addition and Subtraction Facts** Instructions. Use flashcards with addition and subtraction of two-digit numbers and a one-digit number and/or two-digit numbers and two-digit numbers. Let the students use a "Show Me" board where they can write their answers. Flashcards must contain the answer to the addition and subtraction facts. Example:	It is suggested that operation facts should be an integral part of the preliminary activities. **Addition and Subtraction Facts.** Mastery of the skills to add and subtract two-digit numbers with one-digit numbers and two-digit numbers with two-digit numbers is an essential

	23 + 5 = _____ 14 + 7 = _____ 32 + 4 = _____ 48 + 3 = _____ 56 + 2 = _____ 39 + 6 = _____ 17 + 9 = _____ 41 + 8 = _____ 25 + 1 = _____ 36 + 7 = _____	37 - 4 = _____ 49 - 6 = _____ 58 - 2 = _____ 26 - 5 = _____ 53 - 8 = _____ 45 - 3 = _____ 31 - 7 = _____ 72 - 1 = _____ 64 - 9 = _____ 38 - 2 = _____	34 + 27 = _____ 56 + 48 = _____ 72 + 35 = _____ 89 + 42 = _____ 45 + 56 = _____ 63 + 78 = _____ 57 + 66 = _____ 88 + 75 = _____ 47 + 53 = _____ 66 + 44 = _____	78 - 49 = _____ 63 - 27 = _____ 94 - 58 = _____ 56 - 34 = _____ 72 - 39 = _____ 85 - 27 = _____ 69 - 47 = _____ 77 - 58 = _____ 88 - 66 = _____ 55 - 22 = _____
	Multiplication and Division Facts Instructions. Use flashcards with multiplication and division of two-digit numbers and one-digit numbers.			
	4 x 3 = _____ 7 x 5 = _____ 2 x 8 = _____ 6 x 7 = _____ 3 x 9 = _____ 5 x 2 = _____ 8 x 4 = _____ 6 x 9 = _____ 7 x 1 = _____ 3 x 0 = _____	6 ÷ 3 = _____ 9 ÷ 3 = _____ 10 ÷ 2 = _____ 28 ÷ 7 = _____ 90 ÷ 10 = _____ 15 ÷ 5 = _____ 8 ÷ 4 = _____ 25 ÷ 5 = _____ 56 ÷ 7 = _____ 0 ÷ 3 = _____	34 x 5 = _____ 56 x 3 = _____ 72 x 9 = _____ 89 x 4 = _____ 45 x 2 = _____ 63 x 7 = _____ 57 x 8 = _____ 88 x 6 = _____ 47 x 1 = _____ 66 x 0 = _____	36 ÷ 12 = _____ 63 ÷ 9 = _____ 48 ÷ 12 = _____ 72 ÷ 36 = _____ 55 ÷ 11 = _____ 28 ÷ 14 = _____ 84 ÷ 21 = _____ 62 ÷ 21 = _____ 78 ÷ 13 = _____ 92 ÷ 23 = _____
	2. Feedback Monitor the common errors committed by learners. Give immediate and corrective feedback on this operation facts.			
B. Establishing Lesson Purpose	**1. Lesson Purpose** **DAY 1** **Activity 1.** Write the missing number so that the addition sentence is correct.			

requirement for Grade 4 students mentally or mechanically.

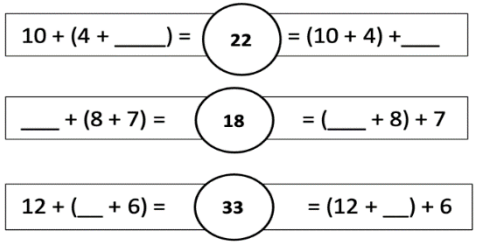
Providing students with flashcards containing answers on the reverse side can be a valuable remediation and intervention strategy for students facing challenges in acquiring these skills. This allows them to work at their own pace to achieve proficiency.

Multiplication and Division Facts. Failing to commit multiplication and division facts to memory puts learners at risk of struggling with the comprehension of advanced mathematical concepts and processes.

If possible, reiterate the following with accompanying explanations: a. multiplication as repeated addition (i.e., 5 x 3 = 5 + 5 + 5); and b. division as the formation of equal groups (i.e., how many groups of three are there in 15?) and inverse operation of multiplication.

Draw learners' attention to the associative property of addition and multiplication and the

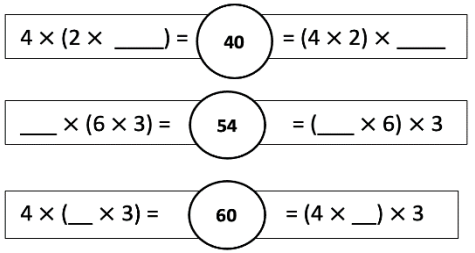
(*Sample items*)



Guide Questions:

1. How did you find the missing numbers so that the addition sentence is correct?
2. How did you check if your answer is correct?

Activity 2. Write the missing number so that the multiplication sentence is correct.
(*Sample items*)

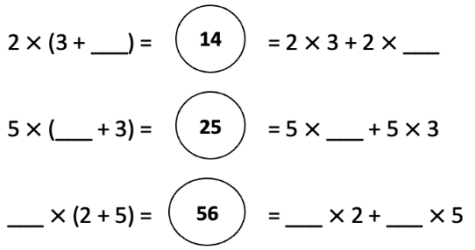


Guide Questions:

1. How did you find the missing numbers so that the multiplication sentence is correct?
2. How did you check if your answer is correct?

DAY 3

Activity 3. Write the missing number so that the number sentence is correct.
(*Sample items*)



Guide Questions:

1. How did you find the missing numbers so that the number sentence is correct?
2. How did you check if your answer is correct?

2. Unlocking Content Area Vocabulary

Order of Operations is a set of rules used in mathematics to determine the sequence in which operations should be performed. For the four fundamental operations, MDAS is used to abbreviate the order of operations.

distributive property of multiplication over addition.

Activity 1 draws learners' attention to addition and subtraction facts and the associative property of addition. Rather than emphasizing the associative property, draw their attention to doing the addition process from left to right and not to the grouping symbol.

Activity 2 draws learners' attention to multiplication and division facts and the associative property of multiplication. Rather than introducing the associative property, draw their attention to doing the multiplication process from left to right and not to the grouping symbol.

Activity 3 draws learners' attention to operation facts and the distributive property of multiplication over addition. Rather than introducing the distributive property, draw their attention to doing all multiplication processes first from left to right before adding. (Give Activity 3 after facilitating sub-topic 1)

C. Developing and Deepening Understanding	**DAY 1-2** **SUB-TOPIC 1: Order of Operations [Performing two operations: Addition and Subtraction (AS rule) and Multiplication and Division (MD rule)]** **1. Explicitation** After letting learners do Activity 1 and 2 and answer the guide questions, the teacher emphasizes that they got the correct answer because they followed a set of rules. The teacher will introduce the order of operations performing two operations at a time (i.e., AS rule and MD rule). • **AS rule** stands for **Addition and Subtraction rule.** The rule states that you should perform addition or subtraction whichever comes first, from left to right. • **MD rule** stands for **Multiplication and Division rule**. The rule states that you should perform multiplication or division whichever comes first, from left to right. **2. Worked Example** Example 1. What is the value of 20 – 8 + 13? Solution: Start from left to right: **20 – 8** + 13 Continue from left to right: **12 + 13** Answer: 25 Example 2. What is the value of 15 + 27 – 2 – 10 + 17? Solution: **15 + 27** – 2 – 10 + 17 **42 – 2** – 10 + 17 **40 – 10** + 17 **30 + 17** Answer: 47 Example 3. Arthur has 15 pieces of colored paper. Ben borrowed 2 colored papers from Arthur while Catherine borrowed 5, and Dave borrowed 6. Eli gave Arthur 8 colored papers. How many colored papers does Arthur have now? Solution: Number sentence: 15 – 2 – 5 – 6 + 8 **15 – 2** – 5 – 6 + 8 **13 – 5** – 6 + 8 **8 – 6** + 8	Remember to perform addition and subtraction operations in the order they are written in a problem. No priority is given to addition over subtraction or vice versa; we work from left to right. This ensures clarity and accuracy when simplifying numerical expressions. To avoid confusion, it is recommended not to give the addition operation as a first operation on the number sentence of the first example so that they will not have a misconception that it is always addition that should be performed, and subtraction is secondary (as the AS appears in the abbreviation of the rule).

2 + 8
10

Answer: Arthur has 10 colored papers

Example 4. What is the value of 30 ÷ 6 × 3?
Solution: **30 ÷ 6** × 3
5 × **3**
Answer: 15

Example 5. Determine the value of 22 × 3 ÷ 2 ÷ 11.
Answer: **22** × **3** ÷ 2 ÷ 11
66 ÷ 2 ÷ 11
33 ÷ 11
Answer: 3

Example 6. Mrs. Cruz has 30 pupils. She grouped the class into 3 groups. Each pupil in a group gets 2 pencils. How many pencils were received by one group?
Solution:
Number Sentence: 30 ÷ 3 × 2
30 ÷ 3 × 2
10 × **2**
20
Answer: There are 20 pencils in one group

Reiterate that the MD rule states that learners need to perform multiplication or division in the order they are written. To avoid confusion, it is suggested that the first example for the MD rule does not have the multiplication operation as the first operation on the number sentence.

*You may create more contextualized word problems to make learners more engaged in problem-solving.

DAY 2

3. Lesson Activity

Let learners do the following:
A. Determine the value of the following:

Set 1	Set 2
1. 35 – 12 – 8 + 17	1. 5 × 3 × 4 ÷ 2
2. 13 + 9 – 15 + 23	2. 108 ÷ 9 ÷ 3 × 6
3. 45 – 32 – 8	3. 18 × 3 ÷ 9
4. 16 + 21 – 9	4. 9 ÷ 9 × 12 ÷ 4
5. 9 + 9 – 9 – 9	5. 10 ÷ 10 × 10 × 10

It is suggested that you give Activity 3 as a preliminary activity to activate prior knowledge. Do this after the first sub-topic was implemented.

B. Determine the missing number so that the number sentence is correct.

Set 1	Set 2
1. 16 – ___ + 23 = 35	1. 7 × ___ ÷ 2 = 21
2. 32 – 24 – ___ + 19 = 24	2. 15 ÷ ___ × 2 = 10
3. ___ - 18 + 9 – 10 = 8	3. 60 ÷ 3 ÷ ___ = 5
4. 34 + 15 - ___ = 40	4. 5 × 5 ÷ ___ ÷ 5 = 1
5. 8 – 5 + ___ - 14 = 11	5. 4 × ___ ÷ 2 = 10

DAY 3

SUB-TOPIC 2: Order of Operations (Performing three or more operations using the MDAS rules)

1. Explicitation

Before introducing the MDAS rule, let the students do **Activity 3.** The teacher will process the learners' work. The teacher needs to draw from the learners the process of doing multiplication first before adding to get the correct missing value and to make the number sentence correct. The teacher introduces the MDAS rule.

MDAS rule stands for **Multiplication, Division, Addition, and Subtraction rule.** The rule states that you should perform first multiplication and division in the order in which they occur followed by addition or subtraction, whichever comes first, from left to right.

2. Worked Example

Example 1. What is the value of 79 – 12 × 4?

Solution: 79 – **12** × **4**

79 – 48

Answer: 31

Example 2. What is the value of 52 – 8 × 5 ÷ 4 + 9?

Solution: 52 – **8** × **5** ÷ 4 + 9

52 – **40 ÷ 4** + 9

52 – 10 + 9

42 + 9

Answer: 51

To avoid misconception, do not give as a first example a number sentence where multiplication or division is the first set of operations to be seen from left to right. Instead, use addition or subtraction followed by either multiplication or division. This makes the first example problematic so that they always must find multiplication/division first before adding or subtracting from left to right.

Use colored pens to direct learners' attention to the first operations to be performed (i.e., multiplication and division).

*You may add word problems to elicit number sentences to represent the situation.

	Example 3. What is the value of 60 × 2 + 5 – 3 + 8 × 6 – 1? Solution: **60** × **2** + 5 – 3 + **8** × **6** – 1 **120 + 5** – 3 + 48 – 1 **125 – 3** + 48 – 1 **122 + 48** – 1 **170 – 1** Answer: 169 **3. Lesson Activity** Let the learners do the following: A. Determine the value of the following: 1. 6 + 42 ÷ 2 – 15 2. 5 + 36 ÷ 2 × 3 – 4 3. 63 ÷ 7 × 3 – 4 4. 25 × 2 – 42 ÷ 6 + 18 5. 36 – 10 × 2 ÷ 5 – 11 B. Determine the missing number so that the number sentence is correct. 1. 9 - ___ + 14 × 2 = 30 2. ___ ÷ 5 - 7 = 3 3. 24 ÷ ___ + 5 × 3 + 2 = 20 4. 16 + 8 × 4 – 9 ÷ ___ = 45 5. 36 + 18 ÷ __ - 10 = 35	**Answer Key:** Part A. 1. 12 2. 55 3. 23 4. 61 5. 21 Part B. 1. 7 2. 50 3. 8 4. 3 5. 2
D. Making Generalizations	**1. Learners' Takeaways** **DAY 2** *For Sub-topic 1:* Guide Question: In solving a series of operations, in what order do you perform addition and subtraction? multiplication and division? **DAY 3** *For Sub-topic 2:* Harry and Hermione were given the same problem. They are to determine the value of 6 + 4 × 2 ÷ 2 - 1. Here are their solutions.	

	<table><tr><td>Harry's solution: 6 + 4 × 2 ÷ 2 – 1 10 × 2 ÷ 2 – 1 20 ÷ 2 – 1 10 – 1 Answer: **9**</td><td>Hermione's solution: 6 + 4 × 2 ÷ 2 – 1 6 + 8 ÷ 2 – 1 6 + 4 – 1 10 – 1 Answer: **9**</td></tr></table> Who got the correct answer and correct solution? Why? **DAY 4** **2. Reflection on Learning** 1. In performing operations, I should look first for _____ and _____ operations. 2. I should perform multiplication and division from _____ to _____. 3. After performing multiplication and division, I can now ____ or _____ from left to right.	

IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION		**NOTES TO TEACHERS**
A. Evaluating Learning	**DAY 4** **1. Formative Assessment** A. Determine the value of the following number sentence: 1. 5 × 2 + 3 2. 15 – 2 + 8 + 10 3. 15 – 6 × 2 + 4 ÷ 4 4. 5 × 3 + 20 ÷ 4 – 12 5. 24 + 18 – 5 × 6 B. Determine the missing number so that the number sentence is correct. 6. 18 ÷ 3 + ___ – 3 × 4 = 9 7. 7 × 3 – 12 ÷ ___ + 6 = 24 8. 8 ÷ ___ + 6 × 8 = 50 C. Write >, <, or = on the blank space to compare the two numerical expressions. 9. 6 × 7 – 12 ÷ 3 + 15 _____ 13 + 3 × 4 – 10 ÷ 2 10. 3 × 2 × 5 + 12 _____ 12 ÷ 2 × 6 + 4 – 3	**Answer Key:** Part A. 1. 13 2. 31 3. 4 4. 8 5. 12 Part B. 6. 15 7. 4 8. 4 Part C. 9. > 10. >

Rubrics. Each item is worth 2 points. The learner should be able to show a complete solution for each item.

2 points	1 point	0 point
Provided a complete solution. All process is correct, and the final answer is correct.	Provided a complete solution but there are 1-2 processes taken incorrectly but arrive at the correct answer. Attempted to solve the item but did not arrive at the correct answer.	Did not attempt to solve the problem.

D. Worksheet *(See attached copy of the worksheet)*
Total points: 30
Rubric/Score Guide (if needed)
For Part A.
Correct Symbol: 1 point Solution: Use the pointing system below:

2 points	1 point	0 point
Provided a complete solution. All process is correct, and the final answer is correct.	Provided a complete solution but there are 1-2 processes taken incorrectly but arrive at the correct answer. Attempted to solve the item but did not arrive at the correct answer.	Did not attempt to solve the problem.

Total points: 15

For Part B.
Use the pointing system below:

Item	Solution 1	Solution 2	Solution 3
1	1 pt	1 pt	3 pts
2	3 pts	1 pt	1 pt
3	1 pt	1 pt	3 pts
4	1 pt	3 pts	1 pt
5	1 pt	3 pts	1 pt

Total points: 15

2. Homework (optional)

<table>
<tr><td rowspan="5">B. Teacher's Remarks</td><td>Note observations on any of the following areas:</td><td>Effective Practices</td><td>Problems Encountered</td><td rowspan="5">The teacher may take note of some observations related to the effective practices and problems encountered after utilizing the different strategies, materials used, learner engagement, and other related stuff.

Teachers may also suggest ways to improve the different activities explored/lesson exemplar.</td></tr>
<tr><td>strategies explored</td><td></td><td></td></tr>
<tr><td>materials used</td><td></td><td></td></tr>
<tr><td>learner engagement/ interaction</td><td></td><td></td></tr>
<tr><td>others</td><td></td><td></td></tr>
<tr><td>C. Teacher's Reflection</td><td colspan="2">Reflection guide or prompt can be on:
• <u>principles behind the teaching</u>
What principles and beliefs informed my lesson?
Why did I teach the lesson the way I did?

• <u>students</u>
What roles did my students play in my lesson?
What did my students learn? How did they learn?

• <u>ways forward</u>
What could I have done differently?
What can I explore in the next lesson?</td><td>Teacher's reflection in every lesson conducted/facilitated is essential and necessary to improve practice. You may also consider this as an input for the LAC/Collab sessions.</td></tr>
</table>