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DEPARTMENT OF EDUCATION

Lesson Exemplar for Mathematics 5

Quarter 1
Lesson
3

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Lesson Exemplar for Mathematics Grade 5
Quarter 1: Lesson 3 Week 3
SY 2024-2025

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MATHEMATICS/QUARTER 1/ GRADE 5

I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES	
***A.* Content Standards**	GMDAS Rules
B. Performance Standards	Use the GMDAS rules for 3 or more different operations
C. Learning Competencies and Objectives	***Learning Competency*** *1. Perform three different operations by applying the GMDAS rules* *2. Perform three or more different operations by applying the GMDAS rules*
C. Content	Perform three or more different operations by applying the GMDAS rules
D. Integration	Realize the importance of following rules.

II. LEARNING RESOURCES

Bandejas, J., Reyes, D., Sagusay, E., and Dela Cruz Jr., E. (2020). *Phoenix Math for the 21st Century Learners*. Phoenix Publishing House. Inc. Quezon City

Basic Math Explained. (2023). *Order of Operations*. [video]. Youtube. https://youtu.be/mEmyTvvGqrc

Camarista, G. G. (2020). *Teaching Mathematics in the Intermediate Grades*. Lorimar Publishing Inc.

Jalon, H. F. et. al. (2019). *Phoenix Math for the 21st Century Learners*. Phoenix Publishing House, Inc., Quezon City

Misa, E. L. (2019). *The World of Mathematics and Beyond*. Brilliant Creations Publishing, Inc., Quezon City

Yn, G. U. (2017). *Our World of Math*. Vibal Group, Inc., Quezon City

III. TEACHING AND LEARNING PROCEDURE		NOTES TO TEACHERS
A. **Activating Prior Knowledge**	**Day 1** **1. Short Review** Perform the indicated operations. a. 100 + 25 b. 250 – 105 c. 12 x 30 d. 200 ÷ 5 e. 20 – 4 – 3	Short review may be done as a game. The group with the higher score will be the winner.
B. Establishing Lesson Purpose	**1. Lesson Purpose** **Ask the learners to do this:** Solve the following: a. 30 – 15 + 2 b. 20 x 2 ÷ 4 **2. Unlocking Content Area Vocabulary** **GMDAS** – Grouping symbols, Multiplication, Division, Addition and Subtraction GMDAS rule states the order of operations when performing series of operations. According to this rule, perform operations first within the grouping symbols, then do multiplication or division before adding or subtracting. Multiply or divide from left to right. Add or subtract from left to right.	Expect varied answers, call some learners to discuss their answer, if no one got the correct answer, tell them that that this is your lesson for today. If someone got the correct answer, then commend the learner and ask to explain his or her solution. Then tell the class that you will have more of this problem today. Answers: a. 17 b. 10
C. Developing and Deepening Understanding	**DAY 1- 2** **SUB-TOPIC 1: Perform three different operations by applying the GMDAS rules** **1. Explicitation** During his birthday, Gelo received P2,000.00. He bought 2 shirts at P400.00 each. How much change will Gelo receive?	The aim of the problem in explicitation is to activate learners' curiosity. You may ask the learners to vote for their answer.

	Which equation gives the correct answer? A. P2,000 - P400 + 400 = 1, 200 **B. P2,000 – 2 x P400 = 1, 200 (correct answer)** Ask: When more than one operation is involved in an equation, which should be performed first? **WORKED EXAMPLES** **GMDAS Rule** a. Perform the operations within each pair of grouping symbols (G) (parenthesis, brackets, and braces) beginning with the innermost pair b. Then, multiply (M) or divide (D) from left to right. c. Lastly, add (A) or subtract (S) from left to right. **Apply GMDAS in performing the indicated operations.** **Example 1: 16 + 9 ÷ 3 x 4** 16 + 9 ÷ 3 x 4 ⟶ Divide first. = 16 + 3 x 4 ⟶ Multiply before adding. = 16 + 12 ⟶ Add. = 28 **Example 2: (9 + 6) ÷ 3 – 2** (9 + 6) ÷ 3 – 2 Add numbers inside the parenthesis = 15 ÷ 3 – 2 Divide before subtracting = 5 – 2 Subtract	Ask two learners whose answers are different to explain their solution. Then lead the discussion to telling the learners that the lesson is about performing three operations. *Ask: When more than one operation is involved in an equation, which should be performed first?* To access more information, the following link will be helpful: https://youtu.be/mEmyTvvGqrc In **worked examples**, discuss the process clearly. The teacher should discuss the solution following the GMDAS rule. It is highly recommended that the GMDAS rule be posted on the posted. Facilitate discussion of each worked example by constructing guide questions to allow learners engagement.

	= **3** **Example 3: 150 ÷ (80 – 50) + 95** 150 ÷ (80 – 50) + 95 Subtract numbers inside the parenthesis = 150 ÷ 30 + 95 Divide before adding = 50 + 95 Add = **145** **Example 4: 95 - 30 x 4 ÷ 12** 95 - 30 x 4 ÷ 12 Multiply first = 95 – 120 ÷ 12 Divide = 95 – 10 Subtract = **85** **Example 5: [(45 ÷ 5) – 7] x 100** [(45 ÷ 5) – 7] x 100 Perform operation inside the parenthesis = [9 – 7] x 100 Subtract numbers inside the bracket = 2 x 100 Multiply = **200** **Activity 1 – Apply me: GMDAS** Refer to the Worksheets for the activity which the learners will accomplish. It is highly encouraged that you monitor your learners' progress and their interactions with his or her partner in this activity. Highly recommended: Class discussion of the solution of Activity 1.	In Example 1, you may ask the class to read the problem. Then ask them to look at the GMDAS rule. May ask, Which operation should be performed first according to the GMDAS rule? Then ask, what should be the next operation that must be performed after performing the first. Do questioning till you reach the final answer. Then discuss the other worked examples in this pattern. You are free to do other ways of processing the worked examples as long as it will allow better understanding of the lesson. **Activity 1** may be done by asking learners to work as pair. Encourage peer tutoring during the activity. Answers in Activity 1 1. 3 2. 14 3. 29 4. 60 5. 2 6. 57 7. 8

DAY 3 - 4

Sub Topic 2: Apply GMDAS in performing three or more operations

Short Review

Ask the learners to state GMDAS rule

GMDAS Rule

a. Perform the operations within each pair of grouping symbols (G) (parenthesis, brackets, and braces) beginning with the innermost pair

b. Then, multiply (M) or divide (D) from left to right.

c. Lastly, add (A) or subtract (S) from left to right.

Tell the learners that the lesson will be extended to performing four operations.

WORKED EXAMPLES

Example 1. 25 – 5 x (16 – 12) ÷ 2

25 – 5 x (16 – 12) ÷ 2 ⟶ Do the operation inside the parentheses first.

= 25 – 5 x 4 ÷ 2 ⟶ Multiply.

= 25 – 20 ÷ 2 ⟶ Divide.

= 25 – 10 ⟶ Subtract.

= 15

Example 2. 280 – 45 ÷ 15 + 9 x 3

280 – 45 ÷ 15 + 9 x 3 ⟶ if dividing and multiplying at once will not affect the result of the expression, you may do operations simultaneously

= 280 – 3 + 27 ⟶ Subtract.

= 277 + 27 ⟶ Add.

= 304

8. 2
9. 28
10. 18

For DAY 3-4 suggested activity: You may create a five-item quiz bee like questions as beginning activity.

Discuss the worked examples following the same strategy used in Day 1-2.

Example 3. 6 x [(7 + 3) x 2] – 6 + 2 x 9

6 x [(7 + 3) x 2] – 6 + 2 x 9 → Start with the innermost grouping symbol

= 6 x (10 x 2) – 6 + 2 x 9 → Simplify the expression inside the parentheses

= 6 x 20 – 6 + 2 x 9 → Multiply 6 x 20 and 2 x 9

= 120 – 6 + 18 → Subtract

= 114 + 18 → Add.

= 132

Example 4. 25 + 15 - (6 x 2) + 60

25 +15 - (6 x 2) + 60 → Do the operation inside the parentheses first.

= 25 + 15 – 12 + 60 → Add.

= 40 – 12 + 60 → Subtract.

= 28 + 60 → Add.

Activity 2 – Solve me!

Refer to the Worksheets for the activity which the learners will accomplish. This may be done by asking learners to work as pair again. Encourage peer tutoring during the activity. It is highly encouraged that you monitor your learners' progress and their interactions with his or her partner in this activity.

Highly recommended: Class discussion of the solution of Activity 2.

Answer key Activity 2

1. 404
2. 42
3. 43
4. 21
5. 1

The teacher may ask students to do trial and error in using the correct grouping symbols.

- If we will group (4 x 7) + 1 do you think we will get 32? We will get 29.
- How, about if we will group 4 x (7 + 1), are we going to get 32?
- Therefore, the 7 + 1 will be grouped together then

WORKED EXAMPLES

Use grouping symbols to make each equation correct.

Example 1: 4 x 7 + 1 = 32	**Example 2:** 6 + 8 ÷ 2 = 7	**Example 3:** 5 + 7 x 2 – 2 – 12 = 5
Solution: 4 x (7 + 1) = 32 4 x 8 = 32	Solution: (6 + 8) ÷ 2 = 7 14 ÷ 2 = 7	Solution: 5 + (7 x 2) – 2 – 12 = 5 5 + 14 – 2 – 12 = 5 19 – 2 – 12 = 5 17 – 12 = 5

Example 4: 16 – 5 x 2 + 3 = 9	**Example 5:** 4 + 2 x 10 ÷ 2 = 14
Solution: 16 – (5 x 2) + 3 = 9 16 – 10 + 3 = 9 6 + 3 = 9	Solution: 4 + (2 x 10) ÷ 2 = 14 4 + 20 ÷ 2 = 14 4 + 10 = 14

Activity 3 – Group Me!

Refer to the Worksheets for the activity which the learners will accomplish. This may be done by asking learners to work as pair again. Encourage peer tutoring during the activity. It is highly encouraged that you monitor your learners' progress and their interactions with his or her partner in this activity.

Highly recommended: Class discussion of the solution of Activity 3.

Activity 4 – Help me find the correct answer!

Refer to the Worksheets for the activity which the learners will accomplish. This may be done by asking learners to work as pair again. Encourage peer tutoring during the activity. It is highly encouraged that you monitor your learners' progress and their interactions with his or her partner in this activity.

Highly recommended: Class discussion of the solution of Activity 4.

multiply it to 4 to get 32.

Now, for the other examples, learners may work on their own as they do the trial and error on which numbers should be grouped to arrive at the correct answer.

The teacher may also ask learners to show their answers on the board and discuss their own work.

Answer key Activity 3

1. (14 – 2) x 4 ÷ 6 = 8
2. (28 ÷ 2 – 4) x 7 = 70
3. 64 ÷ 8 × (5 - 3) + 5 = 21
4. (17 – 3) + 4 x 3 = 26
5. 9 + 2 x (8 – 2) – 3 = 18

Answer key Activity 4

1. 8
2. 92
3. 40
4. 17
5. 33
6. 24
7. 6
8. 49
9. 16
10. 5

D. Making Generalizations	**1. Learners' Takeaways** *What I learned about GMDAS Rule?* The four basic operations are _____, _____, _____, and _____. | **MD** – Next, _____or _____ from left to right. **G** – Simplify the expressions inside the _____ symbols first. | **AS** – Last, _____or _____ from left to right. **2. Reflection on Learning** ● How can we connect this lesson to our everyday lives? ● Cite instances where knowledge of GMDAS is useful in practical contexts.	The teacher will guide the learners in generalizing what they have learned by answering the guide questions and completing the sentences given.

IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION		**NOTES TO TEACHERS**
A. Evaluating Learning	**1. Formative Assessment** **Activity 5** Refer to the Worksheets for the activity which the learners will accomplish. Key to corrections: (some answers may vary) A. 1. B 2. A 3. D 4. A 5. B B. 1. 45 ÷ 5 + 7 =9 + 7 =16 2. 45 x 3 – 36 ÷ 2 =135 – 18 =117 3. 4 + 2 x 3 – 10 = 4 + 6 – 10 = 10 – 10 = 0 4. 33 – 3 + 20 =30 + 20 =50 5. 9 x (4 + 8) ÷ 6 =9 x 12 ÷ 6 =108 ÷ 6 =18 C. 1. 3 ± 7 ± 10 = 20 2. 2 x 7 ± 3 = 17 3. (16 ± 4) x 5 = 100 4. (3 x 3) ÷ (3 x 3) = 1 5. (3 ± 3) – (3 ± 3) = 0 6. 2 ± 7 x 3 = 23 7. 5 ± 6 – 7 = 4 **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>Teachers'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>
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