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Mathematics

Quarter 1 – Module 14:
Order of Operations

Mathematics – Grade 4
Alternative Delivery Mode
Quarter 1 – Module 14: Order of Operations
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DepED
DEPARTMENT OF EDUCATION

Introductory Message

For the facilitator:

Welcome to Mathematics Grade 4 Alternative Delivery Mode (ADM) Module on Order of Operations!

This module was collaboratively designed, developed and reviewed by educators both from public and private institutions to assist you, the teacher or facilitator in helping the learners meet the standards set by the K to 12 Curriculum while overcoming their personal, social, and economic constraints in schooling.

This learning resource hopes to engage the learners into guided and independent learning activities at their own pace and time. Furthermore, this also aims to help learners acquire the needed 21st century skills while taking into consideration their needs and circumstances.

In addition to the material in the main text, you will also see this box in the body of the module:

Notes to the Teacher

This contains helpful tips or strategies that will help you in guiding the learners.

As a facilitator, you are expected to orient the learners on how to use this module. You also need to keep track of the learners' progress while allowing them to manage their own learning. Furthermore, you are expected to encourage and assist the learners as they do the tasks included in the module.

For the learner:

Welcome to the Mathematics 4 Alternative Delivery Mode (ADM) Module on Order of Operations!

This module was designed to provide you with fun and meaningful opportunities for guided and independent learning at your own pace and time. You will be enabled to process the contents of the learning resource while being an active learner.

This module has the following parts and corresponding icons:

 ***What I Need to Know***	This will give you an idea of the skills or competencies you are expected to learn in the module.
 ***What I Know***	This part includes an activity that aims to check what you already know about the lesson to take. If you get all the answers correct (100%), you may decide to skip this module.
 ***What's In***	This is a brief drill or review to help you link the current lesson with the previous one.
 ***What's New***	In this portion, the new lesson will be introduced to you in various ways; a story, a song, a poem, a problem opener, an activity or a situation.
 ***What is It***	This section provides a brief discussion of the lesson. This aims to help you discover and understand new concepts and skills.
 ***What's More***	This comprises activities for independent practice to solidify your understanding and skills of the topic. You may check the answers to the exercises using the Answer Key at the end of the module.
 ***What I Have Learned***	This includes questions or blank sentence/paragraph to be filled in to process what you learned from the lesson.
 ***What I Can Do***	This section provides an activity which will help you transfer your new knowledge or skill into real life situations or concerns.
 ***Assessment***	This is a task which aims to evaluate your level of mastery in achieving the learning competency.
 ***Additional Activities***	In this portion, another activity will be given to you to enrich your knowledge or skill of the lesson learned.
 ***Answer Key***	This contains answers to all activities in the module.

At the end of this module you will also find:

References	This is a list of all sources used in developing this module.

The following are some reminders in using this module:

1. Use the module with care. Do not put unnecessary mark/s on any part of the module. Use a separate sheet of paper in answering the exercises.
2. Don't forget to answer *What I Know* before moving on to the other activities included in the module.
3. Read the instruction carefully before doing each task.
4. Observe honesty and integrity in doing the tasks and checking your answers.
5. Finish the task at hand before proceeding to the next.
6. Return this module to your teacher/facilitator once you are through with it.

If you encounter any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator. Always bear in mind that you are not alone.

We hope that through this material, you will experience meaningful learning and gain deep understanding of the relevant competencies. You can do it!

What I Need to Know

Solving mathematical sentences that have series of operations is sometimes challenging. However, having knowledge of the Multiplication, Division, Addition and Subtraction (MDAS) rule will help you solve problems of that type with ease.

After going through this module, you are expected to:

1. represent and explain Multiplication, Division, Addition, and Subtraction (MDAS) correctly; and
2. perform a series of two or more operations.

What I Know

Simplify the mathematical expressions and then solve.

1. 4 x 9 + 9
2. 15 – 2 x 5
3. 24 – 2 x 9
4. 1 + 2 x 9
5. 6 + 8 x 8

Solve the problems below.

6. Joland and Johann agreed to have equal shares from selling banana cue to their neighbors for ₱15 each. How much will each of them receive if Joland and Johann were able to sell, 30 pieces and 36 pieces, respectively?

7. A certain hospital received Personal Protective Equipment (PPE) for its 126 medical frontliners consisting of 3 face masks and 10 pairs of gloves for each frontliner. How many pieces of PPE did the hospital receive in all?

8. Hugo and his 3 siblings are playing with wooden cubes. He gave his siblings 54 cubes each. Hugo's cubes are twice as many as the number of cubes each of his sibling has. How many wooden cubes do they have in all?

9. A certain barangay received 24 boxes of canned goods with 48 cans in each box. If there are 288 families in the said barangay, how many canned goods will each of the family receive?

10. Before the pandemic, a jeepney can transport 22 passengers in going to Nabua from Palsong and another 22 passengers in going back. During the General Community Quarantine, it can only transport half the number of passengers for each trip. If the jeepney can only make 6 one-way trips a day at a regular fare of ₱15, how much will a driver earn in a day?

Are you done answering?
If yes, time to check. Please go to page 8 for the ***Answer Key***.

What's In

Perform the indicated operation.

1) 5 341
-1 372

2) 2 483
- 786

3) 9 918
+ 8 738

4) 425 ÷17=

5) 8 712 x 3=

6) 5 670 ÷ 9=

7) 658 x 34=

8) 5 122 x 6=

9) 6 108 ÷ 12=

10) 4 396 - 739 =

What's New

EXPLORE AND DISCOVER

Miggy was absent for a week because he was sick. When he got back to school, he had to take a test. Items for the test are given below:

1. 3 x 6 + 18	5. 11 x 6 ÷ 2	9. 6 x 5 – 15 ÷ 3
2. 19 – 12 ÷ 2	6. 51 ÷ 17 x 14	10. 18 ÷ 3 x 4 – 6 + 9
3. 6 x 5 – 15 ÷ 3	7. 75 + 5 - 15	
4. 32 + 12 x 5	8. 60 – 37 + 45	

Do you think Miggy can answer the test correctly? Why? What do you think will he do? If you were his classmate, what would you do to help him? What do you feel when you help someone? Why?

What is It

READ AND LEARN MORE

To find each value, we can use the MDAS rule. MDAS stands for the four basic operations - Multiplication, Division, Addition, and Subtraction.

First, multiply or divide as they come from left to right.

MDAS
1 2

1. $3 \times 6 + 18$ (1)
$18 + 18$ (2)
36

$3 \times 6 + 18 = 36$

2. $19 - 12 \div 2$ (1)
$19 - 6$ (2)
13

$19 - 12 \div 2 = 13$

3. $6 \times 5 - 15 \div 3$ (1)

$30 \quad - \quad 5$ (2)

25

$6 \times 5 - 15 \div 3 = 25$

4. $32 + 12 \times 5$ (1)

$32 + \quad 60$ (2)

92

$32 + 12 \times 5 = 92$

Second, add or subtract in the order they appear from left to right.

5. $11 \times 6 \div 2$ (1)

$66 \quad \div 2$ (2)

33

$11 \times 6 \div 2 = 33$

6. $51 \div 17 \times 14$ (1)

$3 \quad \times \ 14$ (2)

42

$51 \div 17 \times 14 = 42$

7. $75 + 5 - 15$ (1)

$80 \ - \ 15$ (2)

65

$75 + 5 - 15 = 65$

8. $60 - 37 + 45$ (1)

$23 \quad + 45$ (2)

68

$60 - 37 + 45 = 68$

What's More

Activity 1:

Now, try to answer these 2 remaining items:

1) 6 x 5 – 15 ÷ 3

2) 18 ÷ 3 x 4 – 6 + 9

Activity 2:

Solve the following expressions.

1. 25 x 6 – 13 x 4
2. 48 ÷ 3 x 4 – 12 + 8
3. 3 x 6 ÷ 2
4. 10 – 6 + 4
5. 19 – 12 ÷ 2
6. 72 ÷ 9 x 11
7. 6 x 5 – 15 ÷ 3
8. 18 ÷ 3 x 4 – 6 + 9

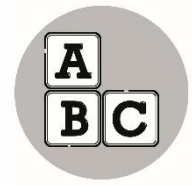
Are you done answering?
If yes, time to check. Please go to page 8 for the ***Answer Key***.

Assessment:

Complete the table. Write the solution and your final answer on the appropriate columns.

Expression	Solution	Answer
1) 6 + 5 x 3 – 7		
2) 8 + 12 - 7		
3) 14 – 7 + 18 ÷ 3		
4) 7 + 15 - 6 x 2		
5) 2 x 2 + 5		

Are you done answering?
If yes, time to check. Please go to page 8 for the ***Answer Key***.



What I Have Learned

Remember!

When performing a series of operations, the MDAS rule must be followed. The rule says that:

1. First, multiply or divide as they come from left to right.
2. Then, add or subtract as they appear from left to right.

What I Can Do

APPLY YOUR SKILLS

A. **Perform the operations in the correct order.**

1. 10 x 3 + 8 = _____
2. 11 + 4 x 5 ÷ 2 = _____
3. 2 x 18 ÷ 3 + 18 – 7 = _____

B. Choose the letter of the mathematical equation that represents correctly the given problem.

4. Mr. David bought three light bulbs for ₱99.00 each and gave the cashier ₱500.00 for his payment. How much was his change?

a. 500 – 3 x 99 = 403
b. 500 – 3 x 99 = 203
c. 3 x 99 – 500 = 302
d. 3 x 99 – 500 = 398

5. Nancy and her 2 friends want to buy *pizza* worth ₱90 per box. If they will buy 2 boxes of *pizza*, how much should each one of them share equally?

a. 90 x 2 ÷ 3 = 60
b. 90 x 3 ÷ 2 = 90
c. 90 ÷ 3 x 2 = 60
d. 90+ 90+90 x 2= 540

Are you done answering?
If yes, time to check. Please go to page 9 for the ***Answer Key***.

Assessment

Evaluate the following expressions. Show your solutions and encircle your final answer.

1. 7 x 4 + 25
2. 15 ÷ 3 x 20
3. 3 + 83 – 73
4. 76 – 8 x 9
5. 9 x 6 ÷ 3
6. 60 + 48 ÷ 2 x 4
7. 30 ÷ 2 x 4 – 8 + 9
8. 12 + 5 x 16 ÷ 4 - 7
9. 35 ÷ 5 x 8 – 7 + 9
10. 6 x 7 – 48 ÷ 12 + 75

Are you done answering?
If yes, time to check. Please go to page 9 for the ***Answer Key***.

Additional Activities

Answer the following problems.

A. Use the digits 5, 6, 7 and 8 once to make the expression result to 37.

☐ x ☐ - ☐ + ☐ = **37**

B. Evaluate the expression if:

1) D = 3
   D x 9 – D ÷ D + 7

2) T = 4
   96 ÷ T x 6 – T + 9

Are you done answering?
If yes, time to check. Please go to page 9 for the ***Answer Key***.

Answer Key

What I Know (pages 1 & 2)

1) 45
2) 5
3) 6
4) 19
5) 70
6) 495 pesos
7) 2 898 pieces
8) 270 wooden cubes
9) 4 canned goods
10) 990 pesos

What's In (page 2)

6) 3 969
7) 1 697
8) 18 656
9) 25
10) 26 736

What's More (page 5)

Activity 1

1) 6 x 5 – 15 ÷ 3
   30 – 15 ÷ 3
   30 – 5
   = 25

2) 18 ÷ 3 x 4 – 6 + 9
   6 x 4 – 6 + 9
   24 – 6 + 9
   18 + 9
   = 27

Activity 2

1) 98
2) 60
3) 9
4) 8
5) 13
6) 88
7) 25
8) 27

Assessment

Expression	Solution	Answer
1) 6 + 5 x 3 – 7	**6 + 5 x 3 – 7** **6 +15 – 7** **21 – 7** **= 14**	**14**
2) 8 + 12 - 7	**8 + 12 -7** **20 – 7** **=13**	**13**
3) 14 – 7 + 18 ÷ 3	**14 – 7 + 18 ÷ 3** **14 – 7 + 6** **7 + 6** **= 13**	**13**
4) 7 + 15 - 6 x 2	**7 + 15 – 6 x 2** **7 + 15 – 12** **22 – 12** **= 10**	**10**
5) 2 x 2 + 5	**2 x 2 + 5** **4 + 5** **= 9**	**9**

What I Can Do (*page* 6)

Apply Your Skills

A. 1. $10 \times 3 + 8 = \underline{38}$
2. $11 + 4 \times 5 \div 2 = \underline{21}$
3. $2 \times 18 \div 3 + 18 - 7 = \underline{23}$

B. 4. b
5. a

Assessment: *(page* 7)

1.	53	6.	156
2.	100	7.	61
3.	13	8.	25
4.	4	9.	58
5.	18	10.	113

Additional Activities: *(page* 7)

A. $\boxed{5} \times \boxed{7} - \boxed{6} + \boxed{8} = 37$

B. 1) D = 3
D x 9 – D ÷ D + 7
3 x 9 - 3 ÷ 3 + 7
27 - 1 + 7
= 33

2) T = 4
96 ÷ T x 6 – T + 9
96 ÷ 4 x 6 - 4 + 9
24 x 6 - 4 + 9
144 - 4 + 9
140 + 9
= 149

References

Tabilang, Alma R. et al. 2015.Mathematics 4 Learner's Material pp. 82-84, Department of Education.

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