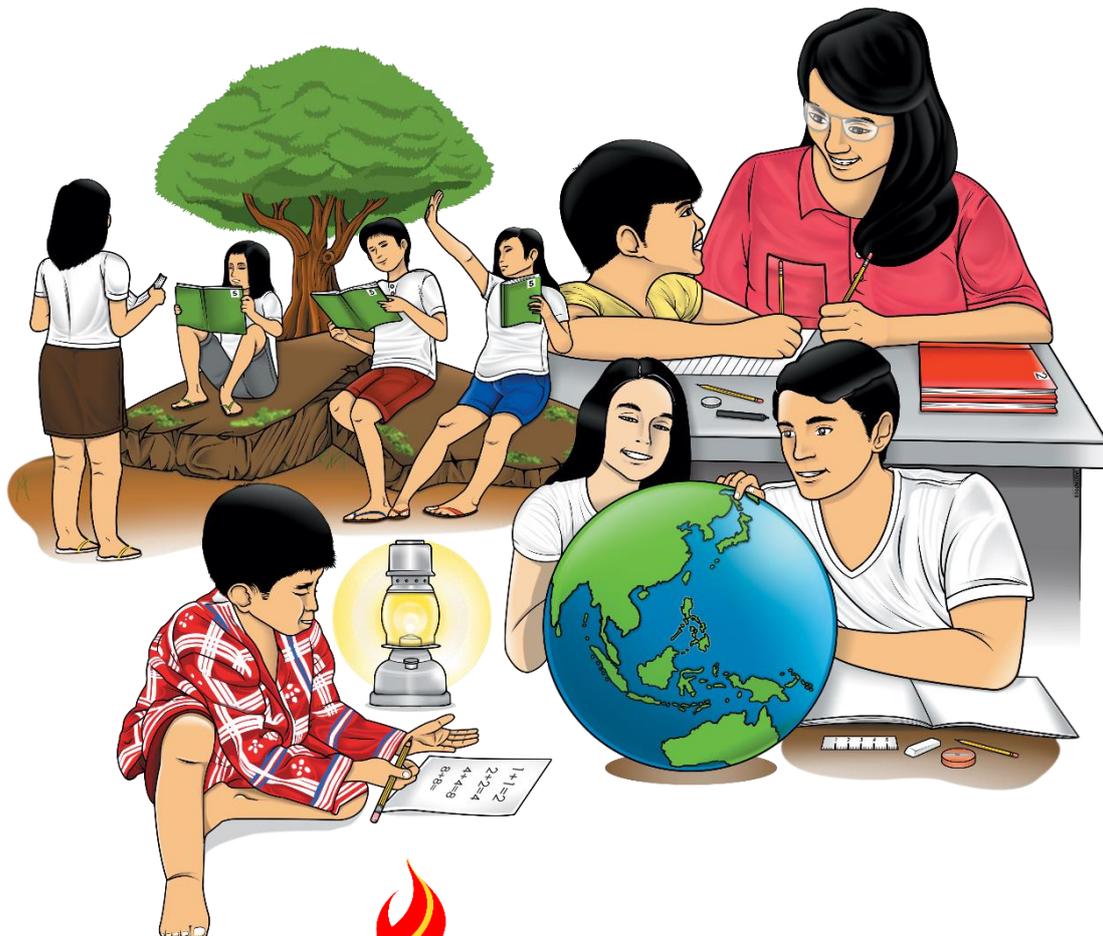


Mathematics

Quarter 1 – Module 7: Multiplying Mentally 2-digit by 1- to 2-digit Numbers



Mathematics Grade-4
Alternative Delivery Mode
Quarter 1 – Module 7: Multiplying Mentally 2-digit by 1- to 2-digit Numbers
First Edition, 2020

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Mathematics

Quarter 1 – Module 7:

Multiplying Mentally

2-digit by 1- to 2-digit Numbers

Introductory Message

For the facilitator:

Welcome to the Mathematics 4 Alternative Delivery Mode (ADM) Module on Multiplying Mentally 2-digit by 1- to 2-digit Numbers!

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 Multiplying Mentally 2-digit by 1- to 2-digit Numbers!

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 into 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

You use place value understanding and visual representations to solve multiplication sentences. As a key area focus in this module, you will learn how to answer a multiplication sentence mentally through a different strategy other than using the place value of the numbers given.

After going through this module, you are expected to:

1. multiply mentally 2-digit by 1-to 2-digit numbers with products up to 200.



What I Know

Multiply mentally.

1. $7 \times 6 =$

2. $3 \times 8 =$

3. $5 \times 12 =$

4. $10 \times 4 =$

5. $12 \times 6 =$

6. $14 \times 3 =$

7. $23 \times 2 =$

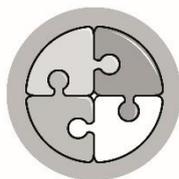
8. $14 \times 11 =$

9. $22 \times 9 =$

10. $13 \times 12 =$

Are you done answering?

If yes, time to check. Please go to page 7 for the ***Answer Key***.



What's In

Before we proceed with our new lesson, let's have a review on multiplying 2-digit numbers by 1- to 2-digit.

Give the product.

1. $\begin{array}{r} 64 \\ \times 3 \\ \hline \end{array}$

2. $\begin{array}{r} 13 \\ \times 2 \\ \hline \end{array}$

3. $\begin{array}{r} 21 \\ \times 7 \\ \hline \end{array}$

4. $\begin{array}{r} 12 \\ \times 8 \\ \hline \end{array}$

5. $\begin{array}{r} 15 \\ \times 4 \\ \hline \end{array}$

$$\begin{array}{r} 6.23 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 7. 13 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 8. 11 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 9. 10 \\ \times 12 \\ \hline \end{array}$$

$$\begin{array}{r} 10. 25 \\ \times 3 \\ \hline \end{array}$$

Are you done answering?
If yes, time to check. Please go to page 7 for the **Answer Key**.



What's New

Let's start our new lesson with a story problem.

Please read carefully and analyze the problem.

Jayson planted 3 rows of seedlings in pots. Each row had 12 seedlings. How many seedlings did he plant in all?



What did Jayson plant in pots?

How many rows of seedlings are there?

How many seedlings does each row have?

What is asked in the problem?

How can we mentally find the answer to this problem?



What is It

Before we discuss the processes used to find the answer to the problem presented, let us first answer the comprehension questions presented earlier.

- What did Jayson plant in pots?
 - *Jason planted seedlings in pots.*
- How many rows of seedlings are there?
 - *There are 3 rows of seedlings.*
- How many seedlings do each row have?
 - *There are 12 seedlings in each row.*
- What is asked in the problem?
 - *The number of seedlings planted in all*

Now, there are two ways to mentally find the answer to the problem presented. Let us study how to multiply numbers mentally.

Study the solutions below.

- Solution 1:

Multiplying the numbers using place value

$$\begin{array}{r} 12 \\ \times 3 \\ \hline 36 \end{array}$$

→ Multiply mentally the multiplier by the ones ($3 \times 2 = 6$)
→ Multiply mentally the multiplier by tens ($3 \times 10 = 30$)
→ Add mentally the partial products ($6 + 30 = 36$)

- Solution 2:

Multiplying the numbers using distributive property

$$\begin{aligned} 3 \times 12 &= 3 \times (10 + 2) \\ &= 3 \times (10 + 2) \\ &= (3 \times 10) + (3 \times 2) \\ &= 30 + 6 \\ &= 36 \end{aligned}$$

Other examples:

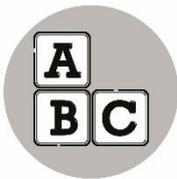
- Let us multiply mentally the following numbers using place value.

16 → Multiply mentally the multiplicand by the ones in the multiplier
 (16 x 2 = 32)
x 12 → Multiply mentally the multiplicand by the tens in the multiplier
 (16 x 10 = 160)
192 → Add mentally the partial products. (32 + 160 = 192)

- By Distributive Property

$$\begin{aligned}
 16 \times 12 &= 16 \times (10 + 2) \\
 &= (16 \times 10) + (16 \times 2) \\
 &= 160 + 32 \\
 &= 192
 \end{aligned}$$

Did you find it easy? Time to apply what you have learned.



What's More

Give the products of each pair of factors mentally. You may use any of the two methods previously discussed.

1. 15	2. 13	3. 14	4. 12	5. 22
<u>x 12</u>	<u>x 11</u>	<u>x 13</u>	<u>x 14</u>	<u>x 5</u>

Are you done answering?
 If yes, time to check. Please go to page 7 for the ***Answer Key***.



What I Have Learned

How do we multiply mentally 2-digit by 1-to 2-digit numbers with products up to 200?

- ✓ There are two solutions or strategies that can be used to multiply mentally 2-digit by 1-to 2-digit numbers with products up to 200. The following are the steps for each strategy.
- ✓

- **Solution 1:**
 - Multiply the ones.
 - Multiply the tens by the ones.
 - Add the two partial products

- **Solution 2:**
 - Use the distributive property.



What I Can Do

Give the products by multiplying the numbers mentally:

$$\begin{array}{r} 1. \ 26 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \ 34 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \ 14 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \ 12 \\ \times 16 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \ 11 \\ \times 12 \\ \hline \end{array}$$



Assessment

Without the use of paper and pencil, give the products of the following.

$$\begin{array}{r} 1. \ 19 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \ 11 \\ \times 18 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \ 15 \\ \times 11 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \ 14 \\ \times 12 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \ 16 \\ \times 11 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \ 75 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \ 17 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \ 32 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \ 15 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \ 23 \\ \times 7 \\ \hline \end{array}$$



Additional Activities

Read and solve the following problems mentally.

1. Liza can sew 5 dresses in a day. How many dresses can she sew in a month of 30 days?
2. There are 38 players in each school band. Five school bands marched in a parade. How many players marched in the parade?
3. The music teacher taught 24 pupils last year. Each pupil learned 8 different songs for the whole year. How many songs did all the pupils learn that year?

Are you done answering?

If yes, time to check. Please go to page 7 for the ***Answer Key***.



Answer Key

<p>Additional Activities</p> <ol style="list-style-type: none"> 1. 150 dresses 2. 190 players 3. 192 songs 	<p>Assessment (p. 1)</p> <ol style="list-style-type: none"> 1. 190 2. 198 3. 165 4. 168 5. 176 6. 150 7. 68 8. 96 9. 90 10. 161 	<p>What I Can Do</p> <ol style="list-style-type: none"> 1. 182 2. 170 3. 140 4. 192 5. 132
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<p>What's Moi</p> <ol style="list-style-type: none"> 1. 180 2. 143 3. 182 4. 168 5. 110 	<p>What's In (p. 6)</p> <ol style="list-style-type: none"> 1. 192 2. 26 3. 147 4. 96 5. 60 6. 115 7. 130 8. 99 9. 120 10. 75 	<p>What I Know (p. 5)</p> <ol style="list-style-type: none"> 1. 42 2. 24 3. 60 4. 40 5. 72 6. 42 7. 46 8. 154 9. 198 10. 156
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References

K to 12 Mathematics Curriculum Guide, August 2016.

Tabilang, Alma R. et. Al, 2015, Mathematics 4 Teacher's Guide
pp. 47-52, Department of Education

Tabilang, Alma R. et. Al, 2015, Mathematics 4 Learner's Material
pp. 36-39, Department of Education

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