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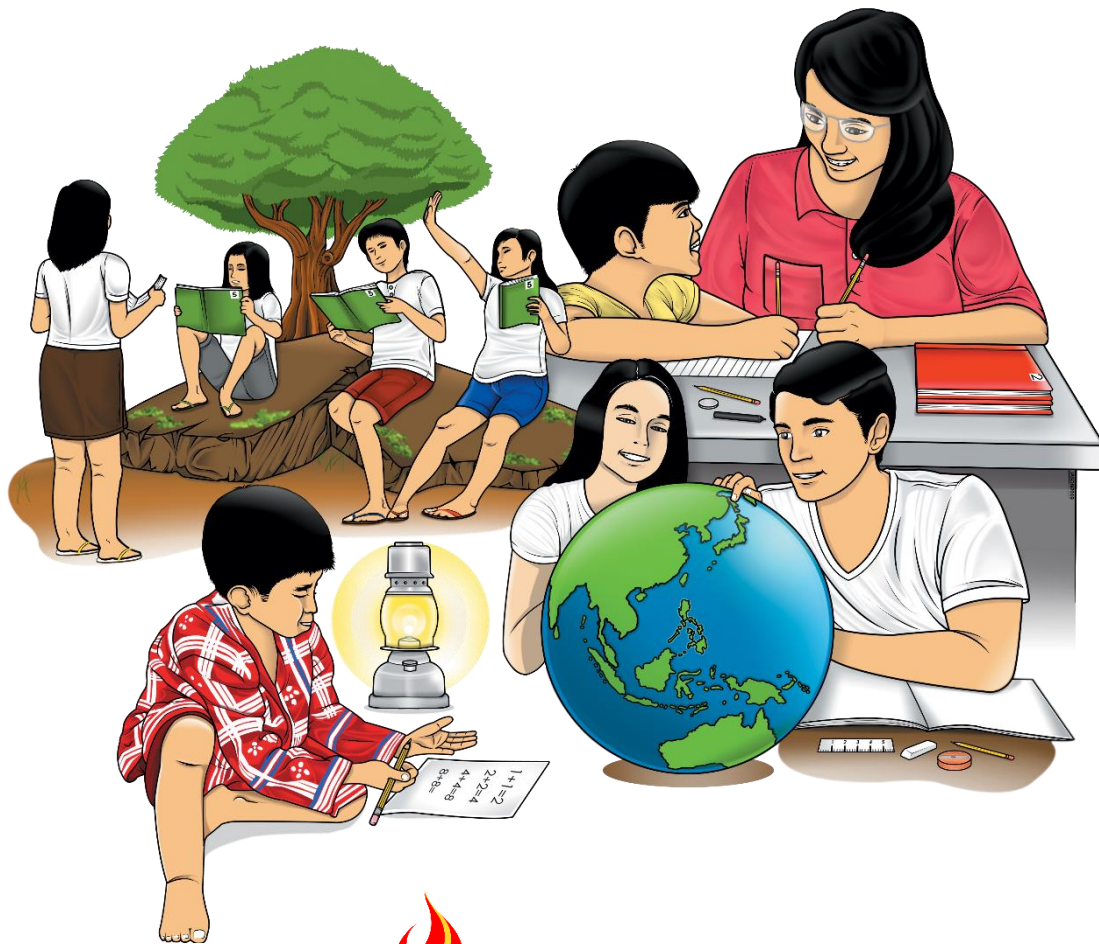

Mathematics
Quarter 1 – Module 5:
Multiplying 2- to 3-digit Numbers
by 1- to 2-digit Numbers

ALTERNATIVE DELIVERY MODE
ADM

Mathematics - Grade 4
Alternative Delivery Mode
Quarter 1- Module 5: Multiplying 2- to 3-digit Numbers by 1- to 2-digit Numbers
First Edition, 2020

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Mathematics
Quarter 1 – Module 5:
Multiplying 2- to 3-digit Numbers
by 1- to 2-digit Numbers

DepED
DEPARTMENT OF EDUCATION

Introductory Message

For the facilitator:

Welcome to Mathematics Grade 4 Alternative Delivery Mode (ADM) Module on Multiplying 2- to 3-digit Numbers 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 2- to 3-digit Numbers 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 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:

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

Good day learner! You have learned how to read and write numbers as well as rounding, comparing and arranging numbers. Now, get ready to explore more. We will start to improve your computational skill.

After going through this module, you are expected to:

1. multiply numbers up to 3-digit numbers by up to 2-digit numbers without regrouping; and

   multiply numbers up to 3-digit numbers by up to 2-digit numbers with regrouping.

What I Know

A. Perform the indicated operation to determine which fruit is the product of each tree.

1.
142
X 2

284   264

2.
323
X 12

3,786   3,876

3.
548
X 21

11,608   11,508

4.
372
X 6

2,232   2,322

5.
156
X 43

7,608   6,708

6.
412
X 3

1 236   1 326

B. Solve the following problems.

7. A pack of relief goods contains 5 different canned goods. If there are 532 packs, how many canned goods are there in all?

8. Every day, Jamelyn buys 8 kilos of mangoes for her Jamelyn's Mango Shake Stand. How many kilos of mangoes did she buy in 122 days?

9. If you save ₱5 a day, how much will you save in one year given that one year has 365 days?

10. In support of the Greening Program of the Department of Education, 250 seedlings were given to each school in the city of Sorsogon. How many seedlings are there in all if there are 68 schools in Sorsogon City?

What's In

A. Can you recall some of the multiplication facts? Try reciting table of 3 and 4.

Start here. 3 x 0 = 0, 3 x 1 = 3, 3 x 2 = 6….

4 x 0 = 0, 4 x 1 = 4, 4 x 2 = 8….

No mistakes? VERY GOOD! If you did, just keep practicing until you remember them all.

The multiplication table is in the *Answer Key.*

B. Now, let us try multiplying these numbers.

1. 41	2. 23	3. 17	4. 13	5. 32
x 2	x 3	x 2	x 5	x 3

Are you done answering?
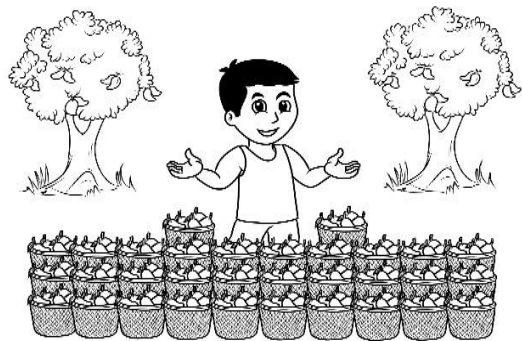If yes, time to check. Please go to page 12 for the **Answer Key**.

What's New

What fruit trees grow in your community? What are the benefits of eating fruits?

Read the problem.

Edison helps his parents in harvesting mangoes in their orchard. He puts all the harvested mangoes in 32 baskets with each basket containing 312 mangoes. How many mangoes are harvested in all?

What is asked in the problem?

What operation are you going to use?

How will you solve the problem?

Try answering the given problem.

![Magnifying glass icon with question mark] ***What is It***

Let us see if we have the same answer.

You need to find out the number of mangoes harvested. So, to solve the problem, you need to multiply 312 by 32.

The number sentence is 312 x 32 = ☐.

Study the solution below using the place value chart.

Step 1: Multiply 312 by the ones digit in the multiplier.

	Thousands	Hundreds	Tens	Ones
X		3	1	2
			3	2
		6	**2**	**4**

⬅ 2 x 312

Step 2: Multiply 312 by the tens digit in the multiplier.

	Thousands	Hundreds	Tens	Ones
X		3	1	2
			3	2
		6	2	4
	9	**3**	**6**	**0**

⬅ 30 x 312

Step 3: Add the partial products.

	Thousands	Hundreds	Tens	Ones
X		3	1	2
			3	2
		6	2	4
	9	3	6	0
	9	**9**	**8**	**4**

⬅ Partial Product
⬅ Partial Product
⬅ Final Product

Another way is to leave the ones place blank instead of writing zero.

```
        3 1 2
      x 32
        6 2 4  →  Partial Product
    +  9 3 6  ↔  Partial Product
    9 9 8 4     →  Final Product
```

Instead of writing zero, leave the ones place blank.

So, there are 9 984 mangoes harvested in 32 baskets.

This is multiplying numbers without regrouping. How about if regrouping is needed? Let me show you an example.

Read the problem.

During the COVID-19 Pandemic, the city government of Sorsogon bought 35 *banyeras* of 'Lawlaw' fish at ₱945 per *banyera* and distributed by packs to households around the city. How much did the city government of Sorsogon pay in all?

To answer this problem, let us multiply ₱945 by 35.

Step 1: Multiply 945 by 5 ones.

```
    2 2
    9 4 5
  x 3 5
  4 7 2 5
```

Multiply the ones. 5x5=25
Write 5 ones in the partial product and regroup 2tens into the tens place.

Multiply 4 tens by 5 ones, then add the regrouped 2 tens.
4 tens x 5 ones = 20 tens = 20
20 tens + 2 tens = 22 tens
Write 2 tens in the partial product and regroup 2 hundreds into the hundreds place.

Multiply 9 hundreds by 5 ones, then add the regrouped 2 hundreds.
9 hundreds x 5 ones = 45 hundreds
45 hundreds + 2 hundreds = 47 hundreds
Write 47 hundreds in the partial product.

Step 2: Multiply 945 by 3 tens.

```
  1   1
  2   2
  9 4 5
x   3 5
4 7 2 5
2 8 3 5 0
```

Multiply 5 ones by 3 tens. 5 x 3 = 15 tens
Write 5 tens in the next partial product and regroup 1 hundred.

Multiply 4 tens by 3 tens, then add the regrouped 1 hundred.
4 tens x 3 tens = 12 hundreds
12 hundreds + 1 hundred = 13 hundreds
Write 3 hundreds in the partial product and regroup 1 thousand into the thousands place.

Multiply 9 hundreds by 3 tens, then add the regrouped 1 thousand.
9 hundreds x 3 tens =27thousands
27 thousands +1 thousand =28 thousands
Write 28 thousands in the partial product.

Step 3: Add the partial products.

```
      9 4 5
    x   3 5
  4 7 2 5 ←  multiply 945 by 5 ones
 + 2 8 3 5 0  ←  multiply 945 by 3 tens
  3 3 0 7 5
```

Multiply by leaving the ones place blank.

```
      9 4 5
    x   3 5
  4 7 2 5        → Partial Product
 + 2 8 3 5       → Partial Product
  3 3 0 7 5      → Final Product
```

Leave the ones place blank.

Therefore, the city government of Sorsogon paid ₱33 075 in all.

Now, you already know how to multiply numbers without or with regrouping. This time you are now ready for the activities. LET'S GO!
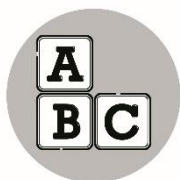
What's More

Activity 1

Multiply the following numbers.

1.	123	2.	34	3.	422	4.	234	5.	345
	x 33		x 12		x 2		x 4		x 42

Are you done answering?
If yes, time to check. Please go to page 12
for the *Answer Key*.

Assessment 1

Multiply the following numbers.

1.	233	2.	324	3.	746	4.	624	5.	519
	x 13		x 23		x 5		x 24		x 21

Are you done answering?
If yes, time to check. Please go to page 12
for the *Answer Key*.

Activity 2

Match the multiplication expression in column A with its corresponding product in column B. Write the letter of the correct answer.

A   B

1. 121 x 3   a. 6,292

2. 241 x 12   b. 363

3. 642×7

4. 572×11

5. 648×45

c. 29,160

d. 4,494

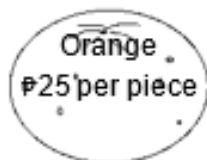e. 2,892

Are you done answering?
If yes, time to check. Please go to page 12
for the *Answer Key*.

Assessment 2

Use the pricelist to compute the cost of each order.

Mango ₱62 per kilo

Guava ₱31 per kilo

Apple ₱31 per piece

Orange ₱25 per piece

Dalanghita ₱45 per kilo

ORDER SLIP		
FRUIT	**QUANTITY**	**COST**
1. Mango	243 kilos	
2. Guava	211 kilos	
3. Apple	156 pieces	
4. Orange	410 pieces	
5. Dalanghita	524 kilos	

Are you done answering?
If yes, time to check. Please go to page 12
for the *Answer Key*.

What I Have Learned

How do you multiply numbers up to 3-digit numbers by up to 2-digit numbers with or without regrouping?

To multiply numbers up to 3-digit numbers by up to 2-digit numbers with or without regrouping:

a) Multiply the multiplicand by ones digit in the multiplier, then by tens digit. Regroup if the product is 10 or more.
b) Add the partial products. Regroup if the sum is 10 or more.

What I Can Do

A. Multiply the given pair of numbers and find the letter that corresponds to the product. Write the correct letter in the boxes below to answer the riddle.

"I have two hands, but no arms." Who am I?

1. 72	2. 152	3. 213	4. 252	5. 712
x 42	x 23	x 31	x 12	x 6

CODE:

L	K	O	C
3,496	4,272	6,603	3,024

1.	2.	3.	4.	5.

B. Read and solve.

6. Mr. Delgado has a coconut plantation. Each row of coconuts in the plantation has 321 coconut trees. If there are 12 rows, how many coconut trees are there in all?

7. The Fruit Shake Store offers different fruit shakes at ₱ 35 each glass. What is the total sales in a day if there are 452 glasses of fruit shakes sold in that day?

8. Belen sells calamansi juice at ₱12 each glass. How much money will she have if she sold 453 glasses of calamansi juice?

Are you done answering?
If yes, time to check. Please go to page 12 for the **Answer Key**.

Assessment

A. Find the product.

1.	311	2.	561	3.	932	4.	751	5.	112
x	2	x	7	x	36	x	72	x	31

B. Solve the following problems.

6. Mr. Dechavez has a *narra* plantation. There are 323 *narra* trees in a row. If there are 32 rows, how many *narra* trees are there in all?

7. Nancy buys 12 kilos of grapes. If a kilogram of grapes costs ₱285, how much does Nancy pay for the grapes?

8. Deramas Family pays ₱799 a month for internet access. How much will they pay for one year?

9. Every box can be filled with 155 average-size oranges. How many average-size oranges can fill 8 boxes?

10. Mike receives ₱140 as his daily school allowance. If there are 21 school days in a month, how much is his monthly allowance?

Are you done answering?
If yes, time to check. Please go to page 12
for the *Answer Key*.

Additional Activities

A. Find each product. Then, compare the two products. Write the correct symbol **>**, **<**, or **=** in the circle. (3 points each)

1. 382 x 23 ◯ 283 x 32
2. 569 x 6 ◯ 253 x 7
3. 304 x 12 ◯ 608 x 6

B. Read and solve.

4. Multiply the largest 3-digit number by the smallest 2-digit number. What is the product?

5. Multiply the smallest 3-digit number by the largest 2-digit number where the digits of each number cannot be repeated.
What is the product?

Are you done answering?
If yes, time to check. Please go to page 12
for the *Answer Key*.

CONGRATULATIONS! You are performing very well.
See you in the next module.

Answer Key

ADDITIONAL ACTIVITIES (page 12)

A.   1.   8 786 > 9 056
     2.   3 414 > 1 771
     3.   3 648 = 3 648
B.   4.   999 × 10 = 9 990
     5.   102 × 98 = 9 996

ASSESSMENT (page 11-12)

1. 622   2. 3 927   3. 33 552   4. 54 072   5. 3 472
6. 10 336 narra trees   7. ₱3 420   8. ₱9 588
9. 1 240 oranges   10. ₱2 940

WHAT'S IN (page 3)

A.   3 X 0 = 0   4 X 0 = 0
    3 X 1 = 3   4 X 1 = 4
    3 X 2 = 6   4 X 2 = 8
    3 X 3 = 9   4 X 3 = 12
    3 X 4 = 12   4 X 4 = 16
    3 X 5 = 15   4 X 5 = 20
    3 X 6 = 18   4 X 6 = 24
    3 X 7 = 21   4 X 7 = 28
    3 X 8 = 24   4 X 8 = 32
    3 X 9 = 27   4 X 9 = 36
    3 X 10 = 30   4 X 10 = 40

B.   1. 82
    2. 69
    3. 34
    4. 65
    5. 96

WHAT I CAN DO (page 10-11)

A.   1. 3 024   2. 3 496   3. 6 603   4. 3 024
     5. 4 272

CODE: CLOCK

B.   6. 3 852 coconut trees
     7. ₱15 820
     8. ₱5 436

WHAT'S MORE (pages 7 - 9)

Activity 1
1. 4 059
2. 408
3. 844
4. 938
5. 14 480

Assessment 1
1. 3 029
2. 7 452
3. 3 730
4. 14 976
5. 10 899

Activity 2
1. B
2. E
3. D
4. A
5. C

Assessment 1
1. ₱15 066
2. ₱6 541
3. ₱4 836
4. ₱10 250
5. ₱23 580

WHAT I KNOW (pages 1&2)

1. 284
2. 3 876
3. 11 508
4. 2 232
5. 6 708
6. 1 238
7. 2 660 canned goods
8. 976 kilos
9. ₱1 825
10. 17 000 seedlings

References

K to 12 Mathematics Curriculum Guide, August 2016.

Tabilang, A. et. al. (2015). *Mathematics: Learner's Material*, Pasig City: Lexicon Press.