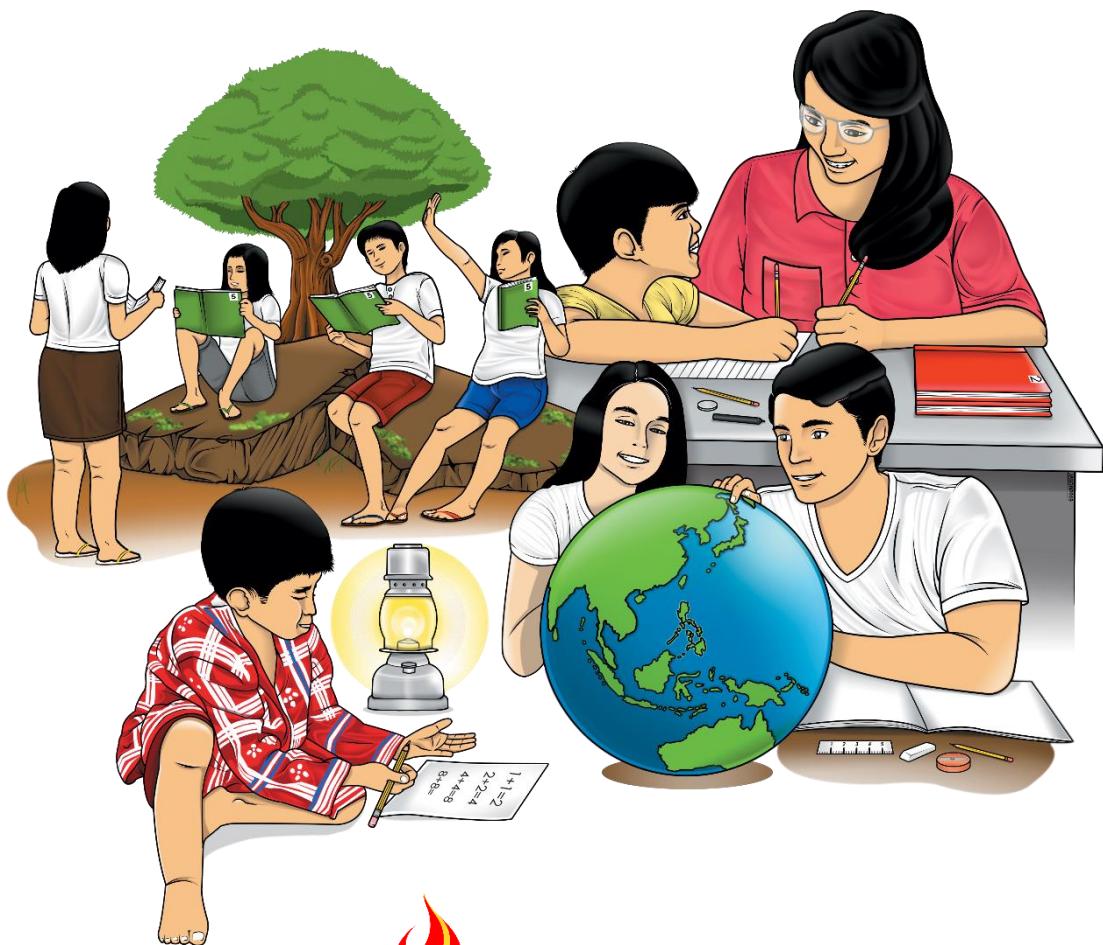


Mathematics

Quarter 1 – Module 5:

Multiplying 2- to 3-digit Numbers by 1- to 2-digit Numbers



GOVERNMENT PROPERTY
NOT FOR SALE



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.

$$1. \begin{array}{r} 142 \\ \times 2 \\ \hline \end{array}$$

284

264

$$2. \begin{array}{r} 323 \\ \times 12 \\ \hline \end{array}$$

3,786

3,876

$$3. \begin{array}{r} 548 \\ \times 21 \\ \hline \end{array}$$

11,608

11,508

$$4. \begin{array}{r} 372 \\ \times 6 \\ \hline \end{array}$$

2,232

2,322

$$5. \begin{array}{r} 156 \\ \times 43 \\ \hline \end{array}$$

7,608

6,708

$$6. \begin{array}{r} 412 \\ \times 3 \\ \hline \end{array}$$

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?

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



What's In

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

Start here. $3 \times 0 = 0$, $3 \times 1 = 3$, $3 \times 2 = 6$

$4 \times 0 = 0$, $4 \times 1 = 4$, $4 \times 2 = 8$



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.

$$1. \ 41$$

$$2. \ 23$$

$$3. \ 17$$

$$4. \ 13$$

$$5. \ 32$$

$$\underline{\times \ 2}$$

$$\underline{\times \ 3}$$

$$\underline{\times \ 2}$$

$$\underline{\times \ 5}$$

$$\underline{\times \ 3}$$

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

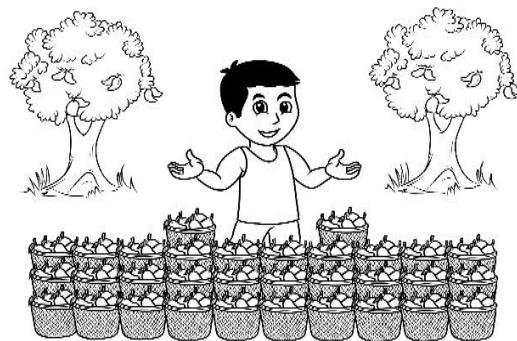


What's New

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.



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 $312 \times 32 = \square$.

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

$\leftarrow 2 \times 312$

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

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

$\leftarrow 30 \times 312$

Step 3: Add the partial products.

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

$\uparrow \uparrow$ Partial Product
 $\uparrow \uparrow$ Partial Product
 $\uparrow \uparrow$ Final Product

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

$$\begin{array}{r} 312 \\ \times 32 \\ \hline 624 \\ + 936 \\ \hline 9984 \end{array}$$

Instead of writing zero, leave the ones place blank.

Partial Product
Partial Product
Final Product

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.

$$\begin{array}{r} 22 \\ 945 \\ \times 35 \\ \hline 4725 \end{array}$$

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

Multiply 4 tens by 5 ones, then add the regrouped 2 tens.
 $4 \text{ tens} \times 5 \text{ ones} = 20 \text{ tens} = 20$
 $20 \text{ tens} + 2 \text{ tens} = 22 \text{ tens}$
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.
 $9 \text{ hundreds} \times 5 \text{ ones} = 45 \text{ hundreds}$
 $45 \text{ hundreds} + 2 \text{ hundreds} = 47 \text{ hundreds}$
Write 47 hundreds in the partial product.

Step 2: Multiply 945 by 3 tens.

$$\begin{array}{r} 1 \ 1 \\ 2 \ 2 \\ 9 \ 4 \ 5 \\ \times \ 3 \ 5 \\ \hline 4 \ 7 \ 2 \ 5 \\ 2 \ 8 \ 3 \ 5 \ 0 \end{array}$$

Multiply 5 ones by 3 tens. $5 \times 3 = 15$ 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.
 $4 \text{ tens} \times 3 \text{ tens} = 12 \text{ hundreds}$
 $12 \text{ hundreds} + 1 \text{ hundred} = 13 \text{ hundreds}$
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.
 $9 \text{ hundreds} \times 3 \text{ tens} = 27 \text{ thousands}$
 $27 \text{ thousands} + 1 \text{ thousand} = 28 \text{ thousands}$
Write 28 thousands in the partial product.

Step 3: Add the partial products.

$$\begin{array}{r} 9 \ 4 \ 5 \\ \times \ 3 \ 5 \\ \hline 4 \ 7 \ 2 \ 5 \leftarrow \text{multiply 945 by 5 ones} \\ + 2 \ 8 \ 3 \ 5 \ 0 \leftarrow \text{multiply 945 by 3 tens} \\ \hline 3 \ 3 \ 0 \ 7 \ 5 \end{array}$$

Multiply by leaving the ones place blank.

$$\begin{array}{r} 9 \ 4 \ 5 \\ \times \ 3 \ 5 \\ \hline 4 \ 7 \ 2 \ 5 \\ + 2 \ 8 \ 3 \ 5 \\ \hline 3 \ 3 \ 0 \ 7 \ 5 \end{array}$$

Leave the ones place blank.

→ Partial Product
→ Partial Product
→ Final Product

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.

$$\begin{array}{r} 123 \\ \times 33 \\ \hline \end{array}$$

$$\begin{array}{r} 34 \\ \times 12 \\ \hline \end{array}$$

$$\begin{array}{r} 422 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 234 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 345 \\ \times 42 \\ \hline \end{array}$$

Are you done answering?

If yes, time to check. Please go to page 12 for the **Answer Key**.



Assessment 1

Multiply the following numbers.

$$\begin{array}{r} 233 \\ \times 13 \\ \hline \end{array}$$

$$\begin{array}{r} 324 \\ \times 23 \\ \hline \end{array}$$

$$\begin{array}{r} 746 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 624 \\ \times 24 \\ \hline \end{array}$$

$$\begin{array}{r} 519 \\ \times 21 \\ \hline \end{array}$$

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

1.



2.



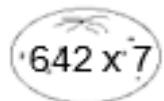
B

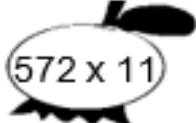
a.

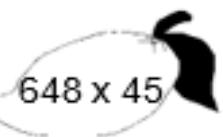


b.



3.  642×7

4.  572×11

5.  648×45

c.  29,160

d.  4,494

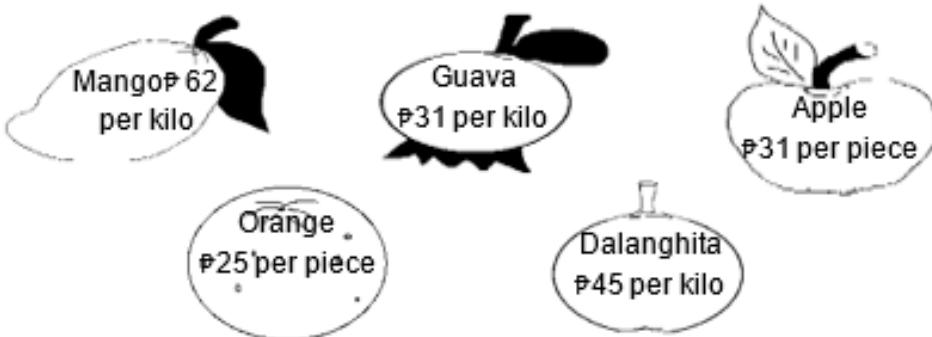
e.  2,892

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.



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:

- Multiply the multiplicand by ones digit in the multiplier, then by tens digit. Regroup if the product is 10 or more.
- 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?

$$\begin{array}{r} 1. \quad 72 \\ \times \underline{42} \\ \hline \end{array} \quad \begin{array}{r} 2. \quad 152 \\ \times \underline{23} \\ \hline \end{array} \quad \begin{array}{r} 3. \quad 213 \\ \times \underline{31} \\ \hline \end{array} \quad \begin{array}{r} 4. \quad 252 \\ \times \underline{12} \\ \hline \end{array} \quad \begin{array}{r} 5. \quad 712 \\ \times \underline{6} \\ \hline \end{array}$$

CODE:

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

1.				
2.				

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.

$$\begin{array}{r} 1. \quad 311 & 2. \quad 561 & 3. \quad 932 & 4. \quad 751 & 5. \quad 112 \\ \times \quad 2 & \times \quad 7 & \times \quad 36 & \times \quad 72 & \times \quad 31 \end{array}$$

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. 382×23 283×32
2. 569×6 253×7
3. 304×12 608×6

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)	
Score update:	<input type="checkbox"/> A. $1.8786 < 9.056$ <input type="checkbox"/> B. $3.414 > 1.771$ <input type="checkbox"/> C. $33.648 = 3.648$ <input type="checkbox"/> D. $4.999 \times 10 = 9.990$ <input type="checkbox"/> E. $102 \times 98 = 9.996$
Score update:	<input type="checkbox"/> 8-9 VERY NICE! <input type="checkbox"/> 10 WOW! GREAT JOB!
Score update:	<input type="checkbox"/> 6-7 NICE! <input type="checkbox"/> 4-5 GOODPPS! Let us review and go over the test again.
Score update:	<input type="checkbox"/> 0-3 Don't worry. Take time to go over the lesson again. <input type="checkbox"/> 3-4 NICE!
Score update:	<input type="checkbox"/> 0-2 GOODPPS! Don't worry.
Score update:	<input type="checkbox"/> 5. WOW! GREAT JOB!
Score update:	<input type="checkbox"/> 3-4 NICE!
Score update:	<input type="checkbox"/> 0-2 GOODPPS! Don't worry.
Score update:	<input type="checkbox"/> 5. LESSON AGAIN! Kindly approach your teacher or facilitator if you need help.
Score update:	<input type="checkbox"/> 1-2 LESSON AGAIN! Kindly approach your teacher or facilitator if you need help.
Score update:	<input type="checkbox"/> 1-2 LESSON AGAIN! Kindly approach your teacher or facilitator if you need help.

WHAT'S IN (page 3)		WHAT CAN DO (page 10-11)		ASSESSMENT (page 11-12)	
A. $3 \times 0 = 0$	$4 \times 0 = 0$	A. 11.3024	2.3496	3.6603	4.3024
$3 \times 2 = 6$	$4 \times 2 = 8$	5.4272			
$3 \times 3 = 9$	$4 \times 3 = 12$				
$3 \times 4 = 12$	$4 \times 4 = 16$				
$3 \times 5 = 15$	$4 \times 5 = 20$				
$3 \times 6 = 18$	$4 \times 6 = 24$				
$3 \times 7 = 21$	$4 \times 7 = 28$				
$3 \times 8 = 24$	$4 \times 8 = 32$				
$3 \times 9 = 27$	$4 \times 9 = 36$				
$3 \times 10 = 30$	$4 \times 10 = 40$				
B. 1. 82		1. 622	2. 3927	3. 33562	4. 54072
2. 69					5. 3472
3. 34					
4. 65					
5. 96					

WHAT'S MORE (pages 7-9)		WHAT I KNOW (pages 1&2)	
1. 284	Activity 1	Activity 2	Activity 2
2. 3 876	1. B	1. B	1. B
3. 11 508	2. E	2. E	2. E
4. 2 232	3. D	3. D	3. D
5. 6 708	4. A	4. A	4. A
6. 1 238	5. C	5. C	5. C
7. 2 660 canned goods	Assessment 1	Assessment 1	Assessment 1
8. 976 kilos	1. 15 066	1. 15 066	1. 15 066
9. #1 825	2. 7452	2. 7452	2. 7452
10. 17 000 seedlings	3. 3730	3. 3730	3. 3730
	4. 14 976	4. 14 976	4. 14 976
	5. 9 23 580	5. 9 23 580	5. 9 23 580