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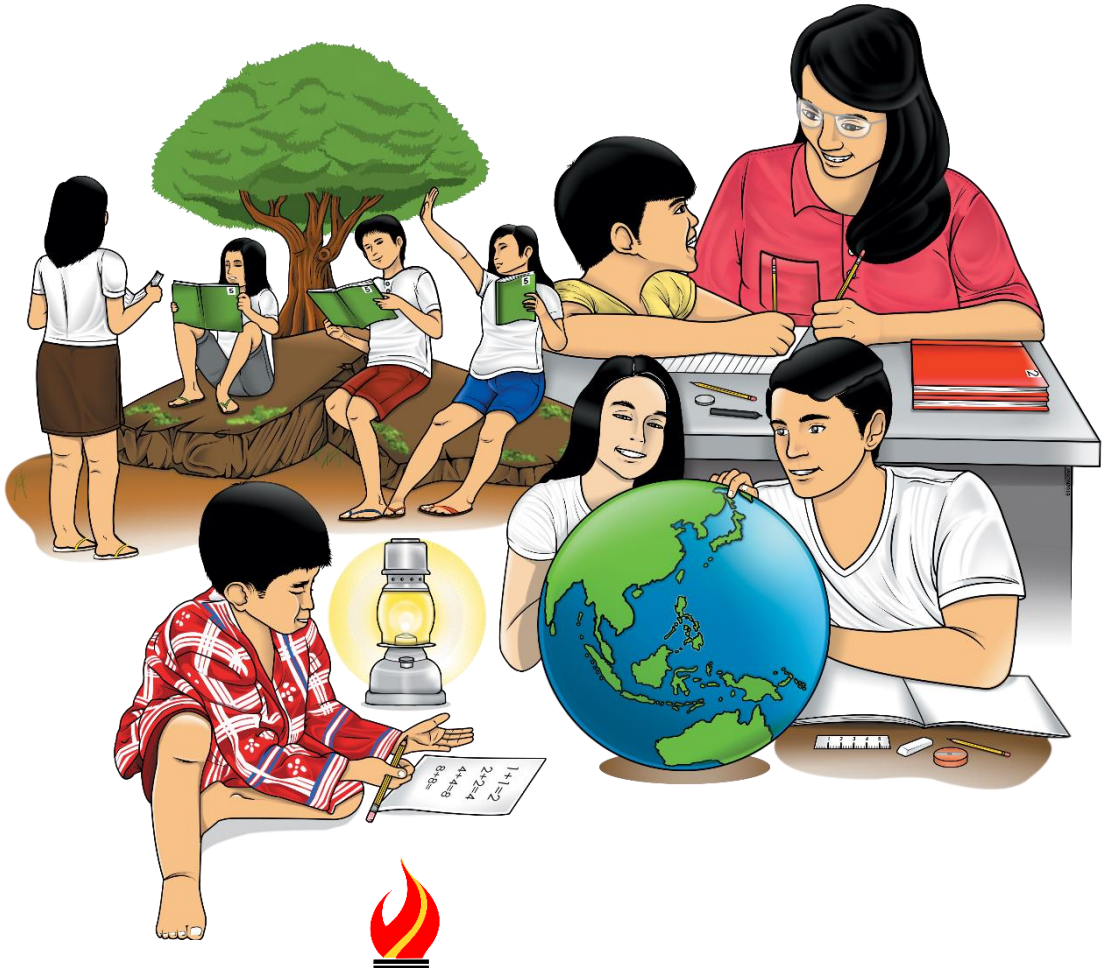
# Mathematics

## Quarter 2 - Module 6: Multiplication of Whole Numbers Mentally



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# Mathematics

## Quarter 2 - Module 6:
## Multiplication of Whole Numbers Mentally

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# Introductory Message

This Self-Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.

# *What I Need to Know*

This module was designed and written with you in mind. It is here to help you comprehend on how to multiply whole numbers mentally. The scope of this module permits it to be used in many different learning situations. The language used recognizes your diverse vocabulary backgrounds. The lessons are arranged to follow the standard sequence of the course but the order in which you read them can be changed to correspond with the Grade 3 Mathematics learning materials you are using.

After going through this module, you are expected to:

- multiply mentally 2-digit by 1-digit numbers without regrouping with products of up to 100 **(M3NS-IIe-42.2)**.

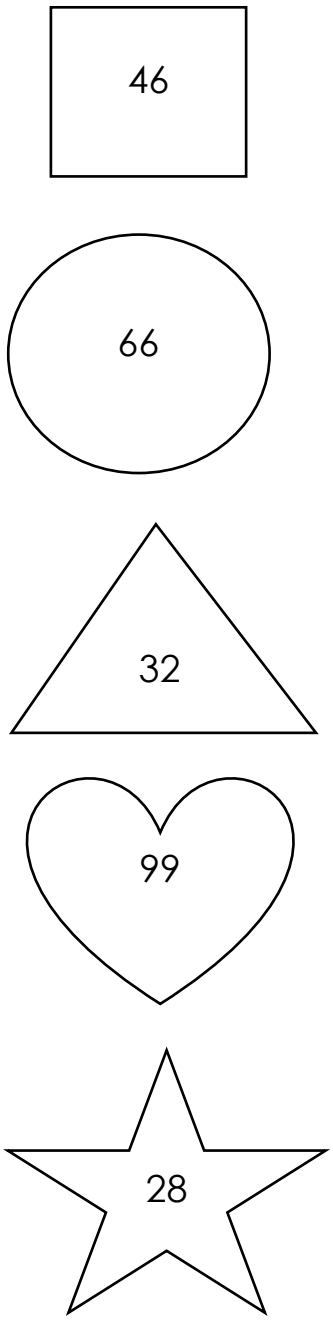
Enjoy your journey. Good luck!

# *What I Know*

## Multiply Mentally

Directions: Identify the missing answer by drawing a line to the correct shape with its product.

1. 23 x 2 =
2. 16 x 2 =
3. 33 x 3 =
4. 14 x 2 =
5. 22 x 3 =



# Lesson 1

# Multiplies Mentally 2-Digit by 1-Digit Numbers without Regrouping

Multiplication is a quicker way of adding the same number multiple times. Since we are repeating the same number, multiplication is also called repeated addition. For example, say you have 7 friends with 13 gummy bears each and you want to find how many they have in total. Instead of adding 13+13+13+13+13+13+13, it is much faster to multiply 7 x 13 to find the answer. When we multiply two or more numbers, the answer is called the **product**.

Multiplication facts must be memorized by the pupils. They can easily answer each problem by giving more activities or drills by the time a teacher introduces the lesson. It can be used in our daily living.

## MULTIPLICATION TABLE

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1X1=1 | 2X1=2 | 3X1=3 | 4X1=4 | 5X1=5 | 6X1=6 | 7X1=7 | 8X1=8 | 9X1=9 |
| 1X2=2 | 2X2=4 | 3X2=6 | 4X2=8 | 5X2=10 | 6X2=12 | 7X2=14 | 8X2=16 | 9X2=18 |
| 1X3=3 | 2X3=6 | 3X3=9 | 4X3=12 | 5X3=15 | 6X3=18 | 7X3=21 | 8X3=24 | 9X3=27 |
| 1X4=4 | 2X4=8 | 3X4=12 | 4X4=16 | 5X4=20 | 6X4=24 | 7X4=28 | 8X4=32 | 9X4=36 |
| 1X5=5 | 2X5=10 | 3X5=15 | 4X5=20 | 5X5=25 | 6X5=30 | 7X5=35 | 8X5=40 | 9X5=45 |
| 1X6=6 | 2X6=12 | 3X6=18 | 4X6=24 | 5X6=30 | 6X6=36 | 7X6=42 | 8X6=48 | 9X6=54 |
| 1X7=7 | 2X7=14 | 3X7=21 | 4X7=28 | 5X7=35 | 6X7=42 | 7X7=49 | 8X7=56 | 9X7=63 |
| 1X8=8 | 2X8=16 | 3X8=24 | 4X8=32 | 5X8=40 | 6X8=48 | 7X8=56 | 8X8=64 | 9X8=72 |
| 1X9=9 | 2X9=18 | 3X9=27 | 4X9=36 | 5X9=45 | 6X9=54 | 7X9=63 | 8X9=72 | 9X9=81 |
| 1X10=10 | 2X10=20 | 3X10=30 | 4X10=40 | 5X10=50 | 6X10=60 | 7X10=70 | 8X10=80 | 9X10=90 |

# *What's In*

Review the multiplication facts and let the child recite the table of multiplication for them to answer easily the given problem.

## Activity 1

Directions: Write the product inside the square.

1. 3 x 4 = ☐
2. 3 x 3 = ☐
3. 4 x 4 = ☐
4. 5 x 5 = ☐
5. 6 x 3 = ☐

*Notes to the Teacher*

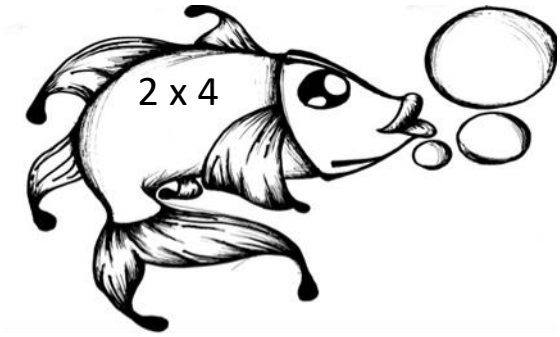
Let the learner master the skip counting to help master the multiplication table easily.

# What's New

## Activity 2

Directions: Write the product inside the biggest bubbles.

1.

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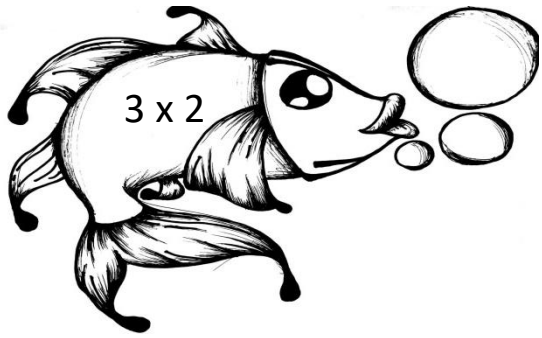


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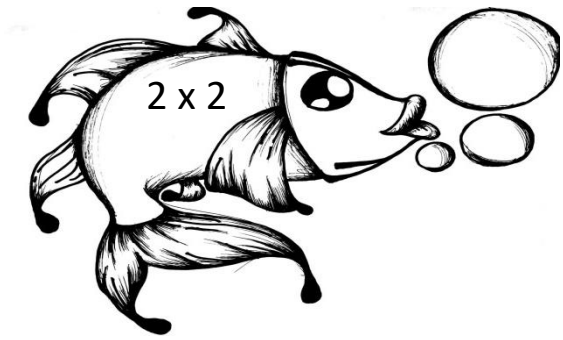


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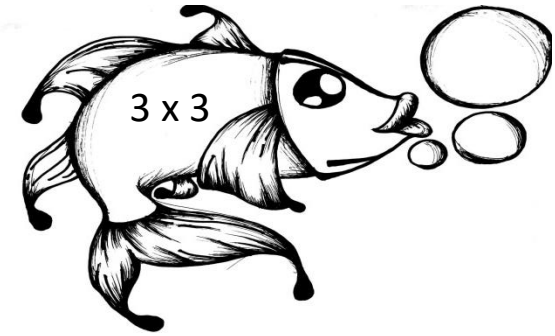


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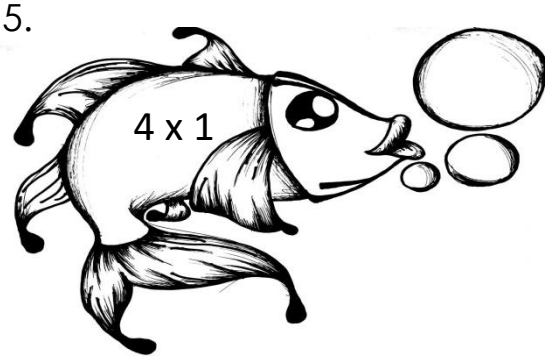


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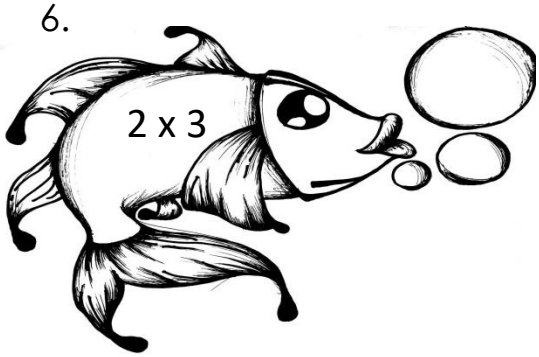


# *What is It*

*Problem:*

Four boys helped their teacher return some workbooks in the library. Each boy carried 12 workbooks. How many workbooks did they carry altogether?

*Solution:* Multiply 12 by 4. Do it mentally.

*Think:*

Using Place Value/Long Method

Multiply the ones digit of the multiplicand by the ones digit in the multiplier. Then, multiply the tens digit of the multiplicand by the ones digit in the multiplier.

Give the product.

| 12 | 12 |
|---|---|
| x 4 | x 4 |
| 8 | 48. |

So, 48 workbooks were carried by the boys.

*Example:*

| 23 | 42 |
|---|---|
| x 3 | x 2 |
| 69 | 84 |

We can also write 10 x 2 horizontally. Which of the two factors is the multiplicand? multiplier?

10 X 2 = 20 ⟶ 10 – multiplicand

x 2 – multiplier

multiplicand multiplier product 20 - product

## Using Shortcut Method

Follow these three simple steps;

1. Expand the 2-digit number into addition of tens and ones form
2. Multiply the ones digit and the tens digit of the multiplicand by the 1-digit multiplier separately.
3. Add the two partial products to get the answer.

*Example:* A.) 13 x 2

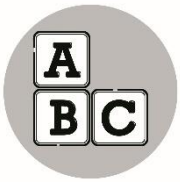
(10 + 3) x 2

20 + 6 = 26

B.) 23 X 2

(20 + 3) x 2

40 + 6 = 46



## *What's More*

Directions: Answer the following mentally using the shortcut method.

1. 11 X 8
2. 21 x 4
3. 13 x 3
4. 24 x 2
5. 12 x 2

# *What I Have Learned*

How do you multiply mentally 2-digit numbers by 1-digit number without regrouping?

1. Expand the 2-digit number into addition of tens and ones form.
2. Multiply the ones digit and then, tens digit of the multiplicand by the 1-digit multiplier separately.
3. Add the two partial products to get the answer.

# *What I Can Do*

Directions: Find the hidden message by multiplying mentally the given exercises. Write the letter of the correct answer inside the oblong to reveal the message.

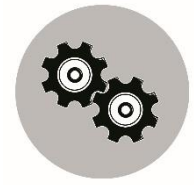
| | | | | | |
|---|---|---|---|---|---|
| A - 60 | F - 21 | K - 30 | P - 76 | U - 94 | Z - 38 |
| B - 13 | G - 18 | L - 33 | Q - 57 | V - 44 | |
| C - 64 | H - 44 | M - 26 | R - 41 | W - 89 | |
| D - 11 | I - 26 | N - 46 | S - 16 | X - 28 | |
| E - 39 | J - 56 | O - 46 | T - 69 | Y - 77 | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 13 | 11 | 23 | 11 | 13 | | 26 | 20 | 23 | 22 |
| X2 | x 3 | x 2 | x 4 | x 3 | | x 1 | x 3 | x 3 | x 2 |
| ◯ | ◯ | ◯ | ◯ | ◯ | | ◯ | ◯ | ◯ | ◯ |

# *Assessment*

Directions: Solve the following items mentally.

| 1. | 2. | 3. | 4. | 5. |
|---|---|---|---|---|
| 12 | 23 | 12 | 24 | 11 |
| x 3 | x 3 | x 2 | x 2 | x 7 |



# *Additional Activity*

## Matching Type

Directions: Match the factors in Column A with its product in column B. Look for the product in Column B.

| Column A | | Column B |
|---|---|---|
| 1) | 11 x 4 = | A. 99 |
| 2) | 31 x 2 = | B. 44 |
| 3) | 33 x 3 = | C. 46 |
| 4) | 10 x 3 = | D. 62 |
| 5) | 23 x 2 = | E. 30 |

# Answer Key

## What's New

1. 8
2. 6
3. 4
4. 9
5. 4
6. 6

## What's In

1. 12
2. 9
3. 16
4. 25
5. 18

## What I Know

1. **46**
2. **32**
3. **99**
4. **28**
5. **66**

## Assessment

1. 26
2. 69
3. 24
4. 48
5. 77

## What I Can Do

I

LOVE

MATH

## What's More

1. 88
2. 84
3. 39
4. 48
5. 24

## Additional Activity

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

# *References*

Chingcuangco, Ofelia G. et al, (2014). Mathematics *Learner's Material.* Pasig City, Philippines

Chingcuangco, Ofelia G. et al, (2015). Mathematics *Teacher's Guide.* Pasig City, Philippines

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